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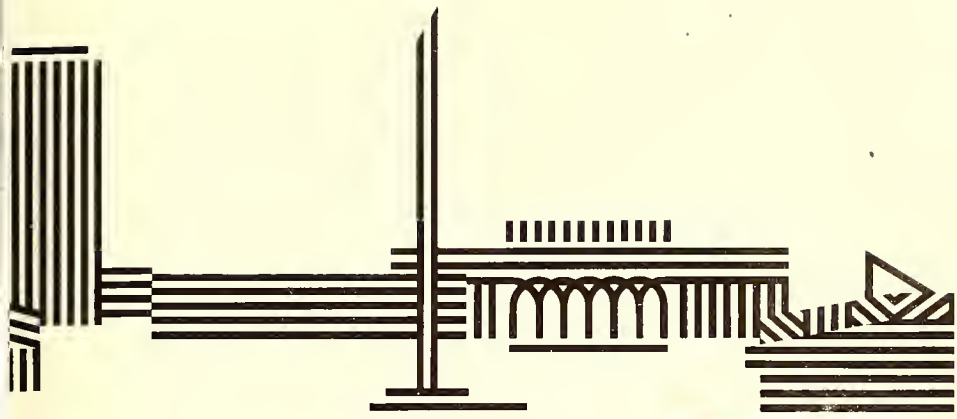
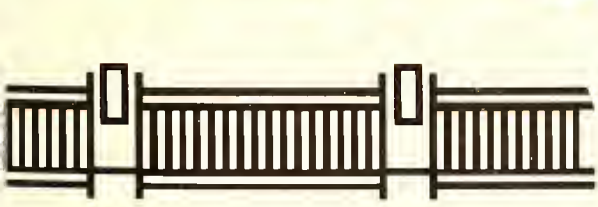


UNCC

THE UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE

UNDERGRADUATE CATALOG
1975 - 76



Correspondence Directory

If, after reading this catalog, you have further questions, or wish to make specific inquiries about the programs of, or admission to, the University of North Carolina at Charlotte, please look below to find the proper office to contact.

Admissions

If you need information on admissions policies, application forms, or wish to make an appointment for an interview, please write to one of the following:

Director of Freshman Admissions
The University of North Carolina at Charlotte
UNCC Station
Charlotte, North Carolina 28223
AC 704/597-2211

Director of Transfer Admissions
The University of North Carolina at Charlotte
UNCC Station
Charlotte, North Carolina 28223
AC 704/597-2212

Student Aid

If you need information on scholarships, work grants or loans, please write to:

Director of Student Financial Aid
The University of North Carolina at Charlotte
UNCC Station
Charlotte, North Carolina 28223
AC 704/597-2239

Campus Housing

If you have questions concerning housing on campus, please write to:

Director of Housing
The University of North Carolina at Charlotte
UNCC Station
Charlotte, North Carolina 28223
AC 704/597-2263

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THE UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE

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THE UNIVERSITY

The University of North Carolina at Charlotte is one of a large number of new universities located in urban areas. The development of these new institutions near our nation's largest cities reflects the contemporary influence of urban life. The city is the laboratory of life in America today.

UNCC is located in the largest urban center of the two Carolinas. With a metropolitan population of almost 400,000, Charlotte ranks as the largest city in the Piedmont Crescent, an area which population experts predict will become the fifth largest urban complex in the nation by the turn of the century.

UNCC offers its students the opportunities to study and become involved in the problems of life in the city. Many distinguished American universities located in isolated areas are taking students to urban centers in order that they may study the city first hand, taking advantage of the wealth of cultural opportunities available only in urban surroundings.

Proximity to and availability of meaningful work opportunities, both during college years and after graduation, are important advantages provided to university students in an urban setting.

PURPOSE

No formal statement of purpose has been adopted at UNCC; however, the following principles have been agreed upon:

Recognizing that knowledge is man's awareness of himself and the universe and that learning is the process of discovery which extends the individual's awareness, the University of North Carolina at Charlotte exists to provide an environment which encourages and nurtures the continuing process of discovery.

The University of North Carolina at Charlotte gives first priority to the development of excellence in undergraduate teaching. Moreover, the University is dedicated to provide both graduate and undergraduate instruction, as well as research opportunities, in the basic natural sciences, the social sciences, the humanities, the fine arts, teacher education and certain professional areas.

Responding to the needs of a rapidly urbanizing society in which it is situated, the University involves itself in intellectual and cultural exchange with the immediate community and the State of North Carolina.

In order that the University not limit its horizons to the boundary of its county, state, or nation, however, there is an emphasis upon international issues with the realization that much of learning—language, literature, technology, the arts—is international in origin and scope.

The University of North Carolina at Charlotte is committed to the concept of lifelong learning and provides opportunities for educational

enrichment and renewal to members of the public in addition to those enrolled in degree and credit programs.

In its relationship with students, faculty and staff members, alumni and the public, the University treats each person as an individual, respecting differences and guaranteeing individual rights of citizenship.

HISTORY

The University of North Carolina at Charlotte was created by the North Carolina General Assembly in 1965. The legislation made Charlotte College, UNCC's predecessor institution, the fourth campus of the consolidated University of North Carolina.

UNCC can trace its lineage to 1946 with the establishment of the Charlotte Center of the University of North Carolina. The center became Charlotte College in 1949. Offering a junior college curriculum, the College operated under the Charlotte Board of School Commissioners until 1958, when it became a part of the North Carolina community college system. In 1963, Charlotte College became a four-year institution.

Dr. D.W. Colvard was elected the first chancellor of the Charlotte campus on January 28, 1966, and the University awarded its first baccalaureate degrees in May of that year.

Dr. Bonnie E. Cone, who had brought the institution to university status as president of Charlotte College, later serving as acting chancellor, was appointed vice chancellor for student affairs and community relations. She retired in 1973 and was replaced by Dr. Douglas M. Orr, Jr. Dr. Wm. Hugh McEniry was appointed vice chancellor for academic affairs in 1967. Dr. McEniry died March 15, 1974, and Dr. Philip E. Hildreth was named vice chancellor for academic affairs. The position of business manager was upgraded to a vice chancellorship in 1971, and Louis W. Moelchert, Jr. was appointed to that position in 1972. A vice chancellorship for development was established that year, too, and Dr. William M. Britt was appointed to the position. The administrative structure was rounded out in 1974 with the appointment of Dr. Frank G. Dickey as the University's first provost.

To give leadership to the academic program and in the sharing of academic and planning responsibilities, division chairmen were appointed in the fall of 1968. When the University's academic divisions were converted into colleges in 1970, the division chairmen were appointed deans of their respective colleges.

THE CAMPUS

UNCC's campus is located eight miles north of downtown Charlotte on N.C. Highway 49 near its intersection with U.S. Highway 29, and adjoining Interstate 85.

The buildings stand on a rolling campus of forest, streams, ponds and fields comprising more than 1,000 acres. Distinctly contemporary in architecture and functional in use, the campus offers an attractive and comfortable setting in which the student may spend his college years. All facilities, except for some large activity areas, are air-conditioned.

ACCREDITATION

UNCC is fully accredited by the Southern Association of Colleges and Schools, the North Carolina Association of Colleges and Universities, the North Carolina Board of Nursing and the National League for Nursing. The University's education program is approved for teacher certification by the North Carolina State Department of Education. UNCC is on the approved list of the American Chemical Society, and programs within the College of Engineering are accredited by the Engineers' Council for Professional Development.

FACULTY

A team of outstanding educators has been assembled to give leadership to a basically young and highly qualified faculty. Faculty members at UNCC have accepted the challenges of building a new institution. They are willing to sacrifice the stability they might have found in established universities for the satisfaction of helping to build a new and modern university, one which is aware of and receptive to its commitment to the wider community it serves.

DEGREES

The University of North Carolina at Charlotte is authorized to award the following degrees:

Bachelor of Architecture
Bachelor of Arts
Bachelor of Creative Arts
Bachelor of Science
Bachelor of Science in Engineering
Bachelor of Engineering Technology
Master of Science in Biology
Master of Science in Chemistry
Master of Arts in Education
Master of Education
Master of Arts in Geography
Master of Management

For a full description of the above degree programs, see the section entitled Degrees Offered, beginning on page 37.

EDUCATIONAL PROGRAM

Students enrolling at the University of North Carolina at Charlotte are able to choose from among more than 40 degree options in 25 different departments. The University's educational structure is divided into eight different colleges, each college covering one or more academic

areas and administered by a dean. The colleges at UNCC are Architecture, Business Administration, Engineering, Human Development and Learning, Humanities, Nursing, Science and Mathematics, and Social and Behavioral Sciences.

THE CATALOG

The catalog is not an irrevocable contract. Regulations printed herein are subject to change by the University at any time. University regulations are policy statements to guide students, faculty, and administrative officers in achieving the goals of the institution. Necessary interpretations of these policies will be made by the appropriate authority with the interests of the students and the institution in mind. Students are encouraged to seek information as they require it about the application of any policy.

NONDISCRIMINATION

The University of North Carolina at Charlotte will accept all qualified students, within budgetary limitations, without regard to race, creed, color, sex, or national origin and recruits faculty and staff and conducts all programs on the same basis.

EVENING PROGRAM

The University offers a well-rounded evening program consistent with its daytime classes. Students may request any course in the catalog and, if the director finds there is sufficient demand, the courses will be offered. Classes are held from 4 p.m. through 10:30 p.m. The Office of Evening Programs is open from 9 a.m. to 5:30 p.m. Monday through Friday. Individuals wishing to contact the director after 5:30 p.m. should call for an appointment. Requests for schedules, recommendations for offerings, and any other information concerning the evening program should be directed to:

Director of the Evening Program
The University of North Carolina at Charlotte
UNCC Station
Charlotte, North Carolina 28223

SUMMER SESSION

The summer session is designed to present courses of the same quality as those offered in the regular academic year. These courses—selected according to the needs of regular students, students transferring from other institutions and students from the community—are presented in two terms consisting of six weeks each. A number of short courses, workshops and institutes are also offered. For detailed information on the summer session, write:

Director of Summer Sessions
The University of North Carolina at Charlotte
UNCC Station
Charlotte, North Carolina 28223

APPLICATION DATES

Due to the large number of applications the University is receiving and because of the institution's rapid growth, the University may be required to announce an earlier cutoff date for applications. Unless such an announcement is made, applications may be submitted and completed according to the following schedule:

Term of Entry	*Application Must Be Filed By*	*Application Must Be Completed By*
First Summer Term, 1975	May 1	May 15
Second Summer Term, 1975	June 15	July 1
Fall Semester, 1975	July 1	July 15
Spring Semester, 1975	December 1	December 15
First Summer Term, 1976	May 1	May 15
Second Summer Term, 1976	June 15	July 1

ACADEMIC CALENDAR

First Summer Session, 1975

May 26	Mon.	Residence halls open
May 27	Tues.	Registration. Last day to register without a late penalty of $5
May 28	Wed.	Classes begin
May 29	Thurs.	Last day to register or add a course
May 30	Fri.	Last day to withdraw from school or drop a course with refund
June 11	Wed.	Last day to drop a course without grade evaluation
June 26	Thurs.	Last day to drop a course
July 1	Tues.	Last day of classes
July 2-3	Wed.-Thurs.	Final examinations

Second Summer Session, 1975

July 7	Mon.	Registration. Last day to register without a late penalty of $5

July 8	Tues.	Classes begin
July 9	Wed.	Last day to register or add a course
July 10	Thurs.	Last day to withdraw from school or drop a course with refund
July 21	Mon.	Last day to drop a course without grade evaluation
Aug. 6	Wed.	Last day to drop a course
Aug.8	Fri.	Last day of classes
Aug. 11-12	Mon.-Tues.	Final examinations

Short Summer Session, 1975

June 16	Mon.	Registration. First day of classes
June 17	Tues.	Last day to register
June 18	Wed.	Last day to withdraw from school or drop a course with refund
June 20	Fri.	Last day to drop without grade evaluation
June 21	Sat.	Scheduled class day
July 1	Tues.	Last day to drop a course
July 3	Thurs.	Last day of classes and/or final examinations

Eight-Week Summer Session, 1975

June 16	Mon.	Registration. Last day to register without a late penalty of $5
June 17	Tues.	Classes begin
June 18	Wed.	Last day to register or add a course
June 20	Fri.	Last day to withdraw from school or drop a course with refund
July 2	Wed.	Last day to drop a course without grade evaluation
July 4	Fri.	Holiday-No classes
Aug. 8	Fri.	Last day of classes

Aug. 11-12	Mon.-Tues.	Final examinations

Fall Semester, 1975

Aug. 21	Thurs.	Faculty and Staff Convocation
Aug. 22	Fri.	Residence halls open for new students only and orientation begins
Aug. 22-27	Fri.-Wed.	Advising, registration and orientation
Aug. 24	Sun.	Residence halls open for continuing students
Aug. 27	Wed.	Last day to register without a late penalty of $10
Aug. 28	Thurs.	Classes begin
Sept. 1	Mon.	Labor Day
Sept. 4	Thurs.	Last day to register or add a course for credit
Sept. 11	Wed.	Last day to withdraw (or drop a course) with refund
Oct. 6-7	Mon.-Tues.	No classes
Oct. 17	Fri.	Reports of unsatisfactory grades by faculty
Oct. 29	Wed.	Last day to drop a course without grade evaluation. Last day to drop a course in College of Engineering.
Nov. 10-14	Mon.-Fri.	Advising for spring semester, 1976
Nov. 26-28	Wed.-Fri.	Thanksgiving holidays
Dec. 1	Mon.	Last day to file for May degrees
Dec. 2	Tues.	Last day to drop a course
Dec. 9	Tues.	Last day of classes
Dec. 10	Wed.	Reading Day
Dec. 11	Thurs.	Final examinations begin
Dec. 19	Fri.	Final examinations end

Spring Semester, 1976

Jan. 6	Tues.	Residence halls open
Jan. 7-9	Wed.-Fri.	Orientation, advising and registration
Jan. 9	Fri.	Last day to register without a late penalty of $10
Jan. 12	Mon.	Classes begin
Jan. 16	Fri.	Last day to register or add a course for credit
Jan. 23	Fri.	Last day to withdraw (or drop a course) with refund
Feb. 16-17	Mon.-Tues.	No classes
Feb. 27	Fri.	Report of unsatisfactory grades by faculty
March 10	Wed.	Last day to drop a course without grade evaluation. Last day to drop a course in College of Engineering.
March 22-26	Mon.-Fri.	Spring holidays
April 5-9	Mon.-Fri.	Pre-registration for first summer session and advising for fall semester, 1976
April 20	Tues.	Last day to drop a course
April 27	Tues.	Last day of classes
April 28	Wed.	Reading day
April 29	Thurs.	Final examinations begin
May 5	Wed.	Final examinations end
May 9	Sun.	Commencement exercises

STUDENT ACTIVITIES

Students at the University of North Carolina at Charlotte are encouraged to participate in extracurricular activities. Student Body Government, University Program Board, campus publications and WVFN, the student radio station, are only a few of the activities available which can play a significant role in each student's development and total education. Participation in activities, ranging in type from

service and religious to athletic and social increases a student's opportunities to acquire leadership skills and to experience the responsibilities for functioning within a self-governmental process.

STUDENT GOVERNMENT

The Student Body Government provides students an early experience in governmental affairs. Students often find their work in student government a useful background for later public service. The history of student government is as old as the institution itself. The University encourages student participation in its affairs and has student representatives on many of the faculty and administrative committees. The leaders of student government are committed to representing the student body and to developing students' awareness of the many facets of life at their University. All students who are regularly enrolled at UNCC, whether on a part or full-time basis, are entitled to participate in student government.

The University has now developed two forms of campus governance involving students. The University Constitution provides for involvement of student, faculty, and administrative officers in a community governance plan. Under this plan, student involvement in policy-making and government of the institution is significant. The principal element of this system is the University Senate in which elected and appointed student, faculty and administrative senators convene for the purpose of recommending to the chancellor such matters as objectives and plans for the University's long-range growth and development, policies for regulating University operations, and procedures for reviewing and appraising budget policies.

The University Court is required to have a minimum of two students among its total number of nine justices. This court entertains jurisdiction over all disputes arising out of a person's relationship to or citizenship with the University, and also serves as a court of appellate review for all lower courts within the University.

The other aspect of campus governance involving student participation relates to the separate composition of a traditional system of student government. At UNCC, Student Body Government comprises:

The Executive Branch made up of the president, the vice president, and the treasurer.

The Student Legislature, composed of the vice president, the four class presidents, the residence hall presidents and commuter student representatives, representatives chosen by the respective students majoring in the several academic colleges of the University and graduate student representatives. The vice president serves as chairman of the Student Legislature and may vote only to break a tie.

The Student Judiciary, composed of the Student Superior Court, Reisdence Courts and the Elections Board. These bodies were established for the purpose of judging violations of the rules and regulations of the University, the student Constitution and the various student statutes and for administering the Honor Code. This code, adopted by the student body during the fall semester of 1965, reads as follows:

> Under the Honor Code you are on your honor not to cheat, lie, or steal; and if you see another student doing so, you are on your honor to report the individual and the circumstance to the appropriate student agency.

UNIVERSITY PROGRAM BOARD

The Program Board develops, administers and supervises the social, cultural, educational and recreational programs of an all-University nature for the students, faculty and staff. It provides an opportunity for students to participate in activities conducive to personal, social and educational development and tries to directly reflect student needs and interests. These programs include art exhibits, concerts, dances, coffee houses, travel programs, lectures, films and other special activities.

The Program Board consists of the chairperson, vice chairperson, secretary-treasurer, director of the Social Committee, director of the Rathskeller Committee, director of the Fine Arts Committee, director of the Films Committee, director of the Special Activities-Organizations Committee, and two members elected at-large from the student body. The chairperson and vice chairperson and two members at-large are elected in the annual campuswide spring elections. The directors are selected by an application-interview-election process during spring semester.

STUDENT MEDIA BOARD

The Student Media Board is comprised of student, faculty and administrative staff members, as well as representatives of the various student publications. Its purposes are to promote the objectives of each publication and to guarantee editorial freedom to the publications within the framework of responsible journalism. The individual media under the Media Board are as follows:

Sanskrit

Sanskrit is a magazine published twice each year by students interested in the arts. Creative work in writing, drawing, photography and other arts is welcomed by the editor. Students are invited to become members of the magazine staff.

Carolina Journal

Students publish a weekly newspaper, *The Carolina Journal*, to cover campus news and provide journalistic experience. Experience on a

campus newspaper, together with a broad educational base, often provides the background for a career on a newspaper or a magazine. The campus newspaper provides a vital service to the entire University community by keeping its members informed of issues of common concern and interest.

Rogues 'n Rascals

The yearbook, *Rogues 'n Rascals*, is another publication which provides both a service to the University and an opportunity for student journalists to gain essential skills for later careers. The yearbook is designed to provide a valid picture of the spirit of campus life. It is valued as an organized pictorial record and as an opportunity for creative student journalists to produce a book which is aesthetically pleasing and representative of the student experience at UNCC. A copy of *Rogues 'n Rascals* is provided to all students taking eight or more semester hours of work each semester during the academic year. Others may obtain a copy upon payment of $8.50.

Radio Station WVFN

Radio Station WVFN was established during the 1970-71 academic year. The station's purpose is to provide practical experience to those interested in the field of broadcasting and broadcast journalism and to serve as an instrument for expression by students, faculty and administration concerning all facets of University life. The Publications Board serves as a governing agency for the station, and its funds are allocated by the student legislative process.

ATHLETICS

The University of North Carolina at Charlotte is an independent member of the National Collegiate Athletic Association, playing a major university basketball schedule. The 1974-75 edition of the 49ers participated in two prestigious holiday tournaments as part of a schedule that included National Champion N.C. State University, Florida, Hardin-Simmons, Boston University and Indiana State University. The University also fields intercollegiate teams in golf, tennis, cross country and women's volleyball.

UNCC boasts one of the finest physical education facilities in the nation. Designed primarily for the participant, the gymnasium features six indoor basketball courts, an Olympic-size swimming pool, handball and squash courts, weight and wrestling rooms, a well equipped training room and lockers for 6,000 students and faculty. It will seat 3,500 spectators for basketball and other intercollegiate activities. In addition, the gym houses classrooms and an auditorium for audio-visual presentations.

A comprehensive program for intramural sports is offered to provide enjoyable recreational opportunities for the UNCC student body. The

program includes team, dual and individual sports for both men and women, co-recreational activities and ample opportunities for unstructured "free play" activities. The gymnasium is open for student use throughout the week, at night and on weekends.

RELIGIOUS LIFE

The nurture of the spirit of man is considered an important part of student services, and many opportunities are given for students of all religious groups to hold discussions and programs. Individual student religious groups are encouraged and hold regular meetings on campus.

The program in religious life is made possible by voluntary contributions from a number of religious groups in Charlotte and North Carolina. It is carried out under the aegis of the United Religious Ministry at the University of North Carolina at Charlotte. The director of the URM serves as the coordinator of the University religious programs and activities and is available for counseling.

Assisting the director of the URM are University chaplains sponsored by denominational and other agencies, as well as selected clergymen from the churches of Charlotte who serve as "dorm ministers" and who are present for counseling.

The Cooperative Christian Ministry in Higher Education is a united ministry of faculty, staff and students at UNCC and the wider Charlotte community. The work is sponsored by the United Methodist Church and the Presbyterian Church in the United States.

This ministry works with all people to share life, teaching, learning and the celebration of human community. The campus minister may be contacted in the Department of Religious Studies.

ORGANIZATIONS

Academic

Alpha Kappa Psi is a national professional fraternity made up of students and faculty of the College of Business Administration. Membership is open to males upon presentation of evidence of satisfactory academic work. Professional and social activities are designed to promote fellowship and professional interest among members.

American Society of Civil Engineers-Student Club was organized for the purpose of meeting with practicing civil engineers, taking field trips, sponsoring civil engineers speakers and participating in Engineering College activities.

American Society of Mechanical Engineers-Student Club provides the same opportunities as above for students interested in mechanical engineering.

American Institute of Architects-Student Chapter provides opportunity for professional development of architectural students through contacts with local architects and attendance at local, regional and national conferences.

American Society of Personnel Administration-UNCC Chapter provides opportunity for exposure to the business community through speakers, tours, general rap sessions and monthly dinner meetings with the Charlotte Chapter of ASPA.

Beta Iota Mu, the Biology Club, was formed to increase knowledge and interest in the biological sciences, to utilize professional biologists and students in a process of mutually exploring problems of biology and to stimulate fellowship among students and faculty interested in biological sciences.

The Chemistry Society is open to students with a deep interest in chemistry and is designed to afford opportunity for members to become better acquainted, to secure the intellectual stimulation that arises from professional association and to install a professional pride in chemistry and chemical engineering.

Chez les Francais, the French Club, is open to all students interested in the language, customs and culture of the French people. Social and educational meetings are held for the purpose of broadening the members' knowledge of French civilization and increasing their conversational ability in the French language.

El Club Espanol is open to students interested in fellowship and conversation in Spanish. The meetings are informal and are usually conducted in both Spanish and English. Frequently, Spanish speaking guests talk to members of the club about the Hispanic countries. The students also participate in the presentation of plays, songs, dances and films.

The UNCC German Club was formed in 1972 and currently has about 25 members. Its purpose is to promote interest and participation in all aspects of German culture. To this end, it has, in the past year, sponsored a dramatic group which won first place in the Clemson University Drama Contest. To provide an opportunity in which German language can be practiced informally, the club hosts the Charlottenburger Stammtisch, held bi-weekly either at Gus's or in the Cone University Center. The club also sponsors German films.

The Engineers Club was the first organization founded for College of Engineering students. The Engineers Club served as a catalyst for the discipline clubs and produces a forum for interdisciplinary activities which are so important in the world today. The Engineers Club coordinates and produces the annual Engineering Fair.

The Society of Physics Students is open to all students who are interested in developing friendships with other members of the local scientific community. The activities of the society provide an additional

medium through which students may advance their knowledge of science.

University Chapter of the Student National Education Association, which is affiliated with the North Carolina Education Association, is to inform students of the possibilities offered in the field of education, to encourage qualified students to become teachers and to provide students with an opportunity to discuss educational issues and problems.

The Student Nurse's Association is a national organization open to all students majoring in nursing. The SNA is affiliated with the district, state and national organization and is actively supported by students and faculty of the College of Nursing. Meeting once a month, the SNA endeavors to increase a sense of individual responsibility for creating and maintaining high ideals of nursing students.

Other academic clubs are:

Accounting Club
Geography Club
Institute of Electrical and Electronics Engineers-Student Chapter
Math Club
Nu Sigma Alpha - Law Enforcement Fraternity
Sociology Club

Physical

The Fencing Club is organized to promote interest in the sport of fencing.

The Football Club has an active membership and plays a full fall intercollegiate schedule.

The Outing Club organizes hiking, rappelling, canoeing and other outdoor excursions.

The Scuba Club is open to all students and faculty as well as those persons trained through UNCC. Non-divers are encouraged to join in order to improve their aquatic skills, participate in social activities and travel inexpensively with the club. As a member of the larger Piedmont Diving and Rescue Association, the Scuba Club has diving rights at three quarries spread throughout the Piedmont section of North Carolina.

Social Fraternities and Sororities

The University has an active and flourishing fraternity and sorority system. Guided by representatives of each fraternity or sorority, the Interfraternity Council and the Panhellenic Society, respectively, guide and coordinate the activities and organizational concerns of their constituents.

The following national fraternities have been chartered for UNCC: Chi Phi, Kappa Alpha Psi, Kappa Sigma, Lambda Chi Alpha, Omega Psi Phi, Pi Kappa Phi and Sigma Phi Epsilon.

The national sororities affiliated with the campus are Alpha Delta Pi, Delta Delta Delta, Delta Sigma Theta, Delta Zeta and Zeta Tau Alpha.

Service

Civinettes is a girls' service club whose membership is open to any interested girl. The club is active in school, community and international Civitan projects. One of the most important community service projects the Civinettes have participated in is the United Way Campaign. Other community service projects they have been involved in include raising money for the National Association for Retarded Children, giving a party for boys and girls from a children's home and helping sponsor a Bloodmobile at UNCC. Civinettes have been active in campus affairs, also. They have undertaken a project to recycle paper on campus, to paint and place trashcans for papers at different locations on the UNCC campus and to serve as ushers for the University Forum.

Musical

The University Chorus has added much to the atmosphere of the school. Students enrolled in choral groups meet regularly with the dual purpose of enjoying singing together and improving their own musical abilities. The Chorus furnishes musical programs for special events during the year. All students are eligible to enroll for one semester hour of credit without audition.

Political

The Young Democrats Club and the Young Republicans Club give the student an opportunity to engage in practical politics as well as to hear speakers from local, state and national levels of our political parties. Membership is open to all interested students.

Black Student Union

An organization of Black students, the Black Student Union undertakes projects of awareness and involvement in the Black community in cooperation with the Black Studies program at UNCC.

University Forum Council

The University Forum provides a campus platform for outstanding national figures to examine key issues in depth. The University Forum Council, composed of representatives from the student body, the faculty, the administration and the community, sponsors the Forum each year. Usually held during the spring semester, the Forum was initiated in 1966.

HONORS AND AWARDS

There are a number of individual student honors and awards for academic achievement, leadership and service which are given annually through the various colleges and on a University-wide basis. Currently, there is only one campus honorary, The Society of 49.

The Society of 49 was created for the purpose of recognizing outstanding leadership and achievement among students who have made significant contributions to the development of the University community. Twenty-four to 30 students are selected each year, 75 percent of whom are seniors and 25 percent of whom are juniors. Selection is primarily based on a point system which considers academics, leadership, service and activities. The student receiving the highest number of points is given the Cindy Holmes Award in memory of the late Cindy Holmes whose unselfish contributions to the University represent the highest ideals of the Society.

CHANCELLOR'S LIST

The Chancellor's List is a record of all students whose academic record merits special recognition from the University. In order to qualify for the Chancellor's List, a student must take a full program (at least 15 semester hours of work) and maintain a quality point average of at least 3.00 (a grade of *B* with no grade lower than a *C*).

COMMENCEMENT MARSHALS

The juniors who have the highest scholastic averages are honored by being named Commencement Marshals. The marshal who has the best academic record is designated chief marshal. For the purpose of this selection, the University considers as juniors those students who will have completed 89 hours of degree work at the end of the spring semester. Juniors who have not completed their last two semesters of work or their last 24 credit hours at the University of North Carolina at Charlotte shall not be considered as eligible as marshals.

GENERAL ALUMNI ASSOCIATION

The General Alumni Association of the University of North Carolina at Charlotte is the recognized official alumni organization. Graduates of the University are encouraged to become members of the Alumni Association so that the University may maintain lifelong contacts with each individual. Graduating seniors of the University of North Carolina at Charlotte are eligible for membership in the General Alumni Association.

Membership can help the student maintain friendships of college days and obtain useful information from the University about programs and social activities. The General Alumni Association is a Patron of Excellence of the University and contributes to worthy projects. Thus, the alumnus can support Alma Mater in a useful and efficient way.

A magazine is provided to dues paying members of the Alumni Association, and group tours to vacation spots, such as Hawaii, are organized.

The graduate should notify the Alumni Office of address changes and significant events in his or her life, such as marriage, births, new positions and honors. In this way, adequate records can be maintained, and the Alumni Office can pass good news along to friends of the alumnus.

FACILITIES AND SERVICES

FACILITIES

Department of Public Safety

The Department of Public Safety, located in the Reese Administration Building, is designed to serve the students, faculty and staff of the University and to protect their persons and property. Police service to the University community is provided 24 hours a day, seven days a week. *Campus Police Officers are commissioned by the attorney general of North Carolina and have full police powers on campus.* Ninety percent of these officers are students, either at UNCC or other institutions, and are sympathetic with the problems of students.

The department provides the University community with a number of other services which bring the department into many areas in what are not normally considered police activities. Assistance for minor car troubles, transportation of sick and injured to the Health Center, operating a "lost and found," delivering emergency messages and assisting owners in gaining entry into locked vehicles are examples of these activities. Guards are assigned to the residence halls for the protection and service of the resident students. In addition to periodic checks of the dorms during the evening and night, the dorm guards have duplicate keys to assist students locked out of their rooms, and the officers maintain a petty cash box for change purposes.

Generally, all buildings and all rooms during non-class hours may be gained only with the written permission of a faculty member. Campus Security should be contacted to gain entrance into a locked room.

All cars parked on campus must be registered and display a UNCC decal. Meters are available for visitors. Copies of regulations with campus maps are available upon purchasing a decal or a request at the Traffic Office. Parking regulations are in effect 24 hours a day. Temporary permits are available from Security for guests or for a student's vehicle that is only temporarily on campus or one used while a registered vehicle is being repaired.

Do not hesitate to contact the campus Police Office in the event of a problem. In addition, your observations and criticisms of our service are valuable in the continuing process of review, analysis and evaluation. The director of the Department of Public Safety invites your visits and your comments.

Emergency numbers are:

CAMPUS POLICE	597-2200
HEALTH SERVICE	(24 hours a day) 597-2265
OPERATOR	(On campus dial "O") 597-2000
MECKLENBURG COUNTY POLICE	9-374-2391
SAFETY COORDINATOR	597-2449

University Residence Halls

UNCC on-campus housing offers students an experience filled with opportunities. Four high-rise residence halls, housing approximately 500 students each, are designed to provide each student with both a degree of privacy and the opportunty to enjoy the close relationship of small group living. Professional staff members, as well as student floor advisers, are committed to working with students in the development of a sense of community conducive to academic and personal growth through programming, advising and acquainting students with the many resources of the University.

Each room includes study and sleeping areas for two students, equipped with built-in dressers, study desks, chairs and closets. In addition, each floor is equipped with a central lounge, study, typing and seminar rooms. Two high-speed elevators service each air-conditioned residence hall.

The main floor contains the office of the resident coordinator, student mail boxes, a concessions area, library, lounge and student government offices. The lower floor contains a recreation room and laundry room.

The University has no requirement regarding on-campus residence. However, space is limited and is filled early. If a student plans to live in the residence halls, he or she should apply as soon as possible. An application form will be sent to the entering student at the time of his or her final admission to the University. A $50 pre-payment must accompany each application.

Library

The Atkins Library is at the heart of the development of the University of North Carolina at Charlotte. A major addition to the facility, the 10-story Dalton Library Tower gives the University the necessary room to develop a truly outstanding collegiate library.

The library has an open shelf collection of approximately 200,000 volumes, with a capacity to hold more than 500,000 volumes in the future. In addition to the bound volumes, the library contains over 100,000 volumes in microforms.

More than 4,300 current periodicals and serials are received through subscriptions. Back files of certain periodicals and newspapers—such as *The New York Times, The Charlotte Observer, The Charlotte News* and *The Wall Street Journal*—are available on microfilm.

The Library of Congress classification system is used for the arrangement of most books and periodicals in the Atkins Library.

Several collections of special materials are housed in Atkins Library.

An archives collection, located in the vault, includes manuscripts, photographs and other materials relating to the history of the University. Also located in the vault is the Rare Book Collection, which contains literary first editions, early printed works, fine press books and a large number of seventeenth and eighteenth century English plays.

A special collection of materials relating to North and South Carolina is located in the lobby of Atkins Library.

A depository since 1964, the library now has a collection of 54,000 U.S. government documents with an average of 14,000 of the most wanted new government publications arriving each month. United Nations documents are also to be found in the library.

Library materials assigned for class reading are housed on the tenth floor of the Dalton Book Tower. Sound recordings, audio-visual media, college catalogs and education curriculum materials are also located on the tenth floor.

Photocopy of library materials can be made on copying machines in the library. Books and periodicals not held by Atkins Library may be obtained from other libraries through Interlibrary Loan requests.

Exhibits on topics of special interest to the campus and the community are featured in display cases on the main and second floors.

In addition to materials directly related to classroom work, the library provides students with general and recreational reading. Comfortable reading areas are located throughout the building. In addition, student carrells and tables are available for concentrated study. Persons doing serious research may apply for private study rooms located in the Dalton Book Tower.

Friends of UNCC played a significant role in developing the present library collection. Also, individuals, who have contributed money and volumes, have greatly sustained the growth of Atkins Library.

Cone University Center

Cone University Center is the community center of the University for all members of the University family—students, faculty, administration, alumni and guests. The center provides for the services, conveniences and amenities the members of the University family need in their daily life on the campus and for getting to know and understand one another through informal association outside the classroom.

The center building houses the cafeteria, games room, lounge, gallery area, a large multi-purpose room with facilities for dances, lectures,

films and banquets, meeting rooms, offices of student government and major publications, hobby shops and an information center.

Rathskeller

The Rathskeller coffeehouse, located in the basement of the Residence Halls Cafeteria, provides a place for students to gather for short-order type foods and for entertainment. Planned and in large part financed by students, the Rathskeller offers a casual atmosphere conducive to relaxation and conversation. The Rathskeller is open on weekdays and weekends, and guest performers appear there frequently. The food service offers pizzas, hamburgers and basket lunches.

Bookstore

In addition to required textbooks, the campus bookstore makes available paperback books for leisure reading, records, sweatshirts and jackets, campus emblems, personal grooming items, and routine school supplies and offers film developing and printing service.

SERVICES

Transportation

Charlotte City Coach Lines provides bus transportation from Charlotte to the campus on a regular schedule connecting with established routes. Detailed information regarding routes, times and fares may be obtained from the main office of the Charlotte City Coach Lines or at the University Bookstore. Weekly passes may be purchased at either location.

University Counseling Center

The University Counseling Center offers the services of professionally trained counselors and psychologists to the University community without charge. Initial counseling appointments may be arranged in Room 06 of the Atkins Building or by calling 597-2104. All counseling interviews are treated in a confidential manner.

The aim of the Counseling Center is to help individuals to gain greater self-understanding, to deal effectively with important decisions and to resolve current problems. The counseling process is individualized for each person to meet his particular needs. It may include individual sessions with a professional counselor, group meetings, use of standardized tests of interests, aptitudes and personality characteristics, or utilization of an extensive occupational-educational library. The staff is also available for consultation to University faculty, groups and agencies.

In addition, the Counseling Center offers special services in reading and study skills. The contents of the programs are offered to both

group and individual bases to meet the specific needs of individual students. Group programs concentrate on short sessions in speed reading, study skills, note taking, brief writing and effective listening. Students are offered the opportunity to continue the group programs on an individualized basis in an open atmosphere. Individualized studies can be broadened to include vocabulary development, spelling, reading and listening improvement, mathematics and English. The program is administered by a professionally trained Educational Services Clinician in cooperation with the center's psychologists and counselors.

Placement

The Placement Office (located in Room 01, Atkins Library) functions as the central placement agency for the campus and serves undergraduates, graduate students and alumni by assisting them in developing their career objectives (preferably beginning with their admission to the University) and in obtaining employment. Services include career planning and guidance; advising on the techniques of employment prospecting, on job selection and analysis, on interviewing, on the preparation of resumes and writing business letters; maintaining, for student browsing, files of information on prospective employers (business firms, governmental agencies, school systems) and on graduate school fellowships and assistantships; providing liaison between employers or graduate schools and graduates through on-campus recruiting by employers and graduate school representatives and by individual referral for current employment openings.

Students who wish to earn part of their educational expenses or to gain work experience may register for part-time, full-time or summer employment off campus. Every effort is made to assist the student who expresses a need for employment and, where possible, to place him in a position relating to his vocational goal.

Degree candidates register with the Placement Office on a voluntary basis early in their graduating year by completing a resume and requesting three professors to complete confidential evaluations on forms provided by the Placement Office. The credentials filed by graduating students are retained on a permanent basis.

All employers and schools interviewing on campus or listing openings with the Placement Office must indicate that they are equal opportunity employers, that is, that in hiring, compensation, promotion, training or admission they do not discriminate on the basis of race, color, religion, sex or national origin.

Computer Center

The Computer Center provides digital computer support to the academic and administrative programs at the University. Less than 20 years ago the use of computers was at its infancy, and now it has been said that this is the "Computer Decade." In fact, the computer revolution has been compared in its impact on society to the industrial

revolution. Students are encouraged to learn about computer utility through use of the resources in the Computer Center. These resources include a Burroughs 5500 Computer System, a terminal connection to the Triangle Universities Computation Center and a variety of software.

Use of the computer is widespread at UNCC. Examples of its use in academic areas are the study of programming languages in computer science, statistical analysis of data files for sociology, history, political science and psychology, transportation problem solving in geography, and molecular analysis in chemistry. Examples of its use in administrative areas are maintenance of vendor and budget files for the business office and the processing of student information for the Records and Admissions Office.

Health Service

The University Health Service, housed in a new building completed in 1971, is operated 24 hours a day, seven days a week. The new building has a capacity for 22 patients, with eight semi-private rooms and six private rooms. A physician is employed on a full-time basis. He has regular hours daily and is on call for emergencies. Registered nurses are on duty at all times.

The Health Center offers comprehensive care to all students with referral available when the services of a specialist are required.

Institute for Urban Studies and Community Service

Director: J.L. Cox
Associate Director: J.R. Hampton
Associate Director: L.G. Owen
Associate Director/Coordinator Ex. & Cont. Education: H.H. Martin
Asst. Coordinator, Ext. & Continuing Education: A.P. Retzer
Conference Coordinator: D.G. Lakin
Program Director: S.T. Crane
Administrative Assistant: J.A. Begole

The Institute for Urban Studies and Community Service was established in 1970 to provide a vehicle for relating university resources to the needs of the urban regions in the state and for helping to carry out UNCC's objectives as an "urban university." The general objectives of the Institute are (1) to help the total University relate to urban society, (2) to help the state and its communities deal with urban problems, and (3) to contribute to knowledge of urban community life. It attempts to stimulate and facilitate the continual academic and professional involvement of the University in teaching, public service and research programs particularly related to problems associated with urbanization. The Institute looks upon the Metrolina region as its primary laboratory.

Institute programs can be roughly divided into the traditional categories of research, community service and education. Recent research projects sponsored by the Institute include studies of citizen attitudes and metropolitan government in the Charlotte region, community-based mental health clinics, evaluation of the Mecklenburg County Youth Services Bureau, the effects of school policy on changing neighborhood patterns, the effects of reorganization of Charlotte's police districts, and policy impacts in the urban community. The Institute also sponsored projects leading to the publication of the *Metrolina Atlas* and the *North Carolina Land Use Bibliography.*

The community service role of the Institute focuses upon encouraging and coordinating the faculty and staff in efforts to improve the level of information and understanding about community problems and issues. This has included direct technical assistance to community organizations and support to the Piedmont Urban Policy Conference and the Central Piedmont Chapter of the American Society for Public Administration. Other Institute efforts are the Public Service Careers program and the Senior Scholars Program for senior citizens.

The Institute also has major responsibility for continuing education programs on the UNCC campus. It is responsible for coordinating the University's resources and facilities in developing and carrying out conferences, institutes, short courses, workshops and seminars and credit and non-credit extension and continuing education programs.

ADMISSION PROCEDURES

The University of North Carolina at Charlotte accepts applications for admission for both undergradute and graduate study.

Undergraduate students seeking application forms and admissions information should address inquiries to the Director of Undergraduate Admissions, The University of North Carolina at Charlotte, Charlotte, North Carolina 28223. Students seeking application forms and information about graduate study should address inquiries to the Director of Graduate Studies, The University of North Carolina at Charlotte, Charlotte, North Carolina 28223.

As a rule, applications may be made for the regular semesters beginning in August and January and for the two summer terms beginning in June and July. Applications for any semester or term should be submitted in accordance with the application dates. The University may alter these application dates in accordance with available resources and the enrollment limitation established by the North Carolina General Assembly.

The University considers all applications without regard to race, color or sex. The University reserves the right to withhold the admission of any applicant who fails to meet the general requirements for admission or the specific requirements listed for freshmen, transfers or graduates.

*REQUIREMENTS FOR UNDERGRADUATE ADMISSION**

General Requirements

1. Satisfactory evidence of good character.

2. Evidence of good physical and mental health. The applicant's medical report properly completed on the form sent to the applicant with the notice of conditional admission must be received and approved by the University Health Service before final admission can be granted.

3. Satisfactory record of scholastic achievement. The minimum evidence of academic promise presented under *Admission to Freshman Standing* or *Admission of Transfer Students* does not assure automatic admission. Space factors and out-of-state quotas must be considered. The Committee on Admissions may disapprove the application of any applicant for cause.

4. Application fee of $10 which is *not deductible and is not refundable.*

Early Admission

The University will admit specially talented high school students after they have completed the eleventh grade (achieved bona fide senior status as defined by their respective school systems) providing they meet other standards required for freshman admission.

*For additional requirements for admission into the Bachelor of Creative Arts degree program, see page 157.

A letter of recommendation from the student's high school principal is required for consideration for early admission.

Admission to Freshman Standing

An applicant for admission to the freshman class should be a graduate of an accredited secondary school and must have the recommendation of his principal, headmaster or guidance counselor. Failure of the principal or counselor to make any recommendation will result in the record being returned to the school for completion.

Either of two forms may be used for sending the secondary school record to the University. The applicant may use the form sent to him with his application or the form adopted by his secondary school. The secondary school record should show the grades through the junior year and courses in progress in the senior year, rank in class and pertinent test data.

The nongraduate must be 18 years old, have a high school equivalency certificate and present evidence of succeeding in his selected curriculum.

Evidence of 16 acceptable units, 13 of which must be basic academic courses, is required. The suggested distribution is English, four units; algebra and geometry, three; foreign language, two; social sciences, two; science, one; electives, four. Emphasis will vary according to the college of the University into which admission is sought. Engineers must present algebra, trigonometry, plane and solid geometry or the equivalent in integrated courses. Nursing majors must present chemistry and biology.

Each applicant must present satisfactory scores on the American College Testing Program or the Scholastic Aptitude Test of the College Entrance Examination Board. Meeting certain scholastic levels on the tests does not guarantee admission. All relevant factors are considered, but the secondary school record carries greater weight in the prediction than do the ACT or SAT scores. All factors considered collectively and individually in proportion to their contribution must indicate that the freshman applicant has a reasonable chance of succeeding in his selected curriculum.

Architecture and engineering applicants are required to have at least 450 on the mathematics portion of the Scholastic Aptitude Test or 20 on the American College Testing.

It is the responsibility of the applicant to see that the Office of Admissions receives an official score report. Typed and handwritten scores cannot be used for admission purposes.

Transfer applicants with less than sophomore standing must meet all entrance requirements for freshmen, including satisfactory scores on the

American College Testing or the Scholastic Aptitude Test and must have a *C* average on all work undertaken at the other institutions as well as *C* grades in work accepted by the University.

Advanced Placement Course Credit

Any student may apply for course credit in appropriate subjects if he has an Advanced Placement Course in secondary or preparatory school and has received a score of four or five on the Advanced Placement Test. Grades of three will be granted credit provided that the departmental chairmen concerned approve. The advanced placement privilege gives students a wider range of course selection and may reduce the amount of time required to earn a degree.

Admission of Registered Nurses

Registered nurses who are currently licensed to practice nursing and who meet University requirements for admission as freshman or transfer students are considered for admission to the College of Nursing. Advanced standing in nursing will be awarded on the basis of achievement demonstrated by qualifying examinations administered after admission to the College of Nursing.

Admission of Transfer Students

A student transferring to the University of North Carolina at Charlotte must request an official transcript from the secondary school of graduation and from each college or institution beyond the high school attended showing honorable dismissal, good standing and eligibility to return. Also, recommendations should be sent from all institutions previously attended.

To be admitted, a transfer applicant must have a *C* average (2.0 based on an *A* grade being equated at four points according to our method of computation) or better on all courses attempted at the institution attended; must have at least a *C* grade average in all courses that are acceptable for evaluation; and must have a *C* grade or better on each course accepted for transfer credit.

Transfer students with fewer than 24 transferable semester hours will be accepted as freshmen only when they meet all freshman entrance requirements, including satisfactory scores on the Scholastic Aptitude Test or American College Testing and meet the requirements, also, of transfer students.

To be admitted as a non-freshman transfer student, the applicant must have acquired sufficient credits at an accredited institution to have the equivalent of sophomore standing at the University of North Carolina at Charlotte. In no case shall fewer than 24 semester hours of acceptable transfer credits be considered the equivalent of sophomore standing.

Applicants may be asked to take special tests as a condition of admission.

The University accepts up to 64 hours of academic credit (66 including two semester hours of required physical education) from a junior or community college toward the Bachelor of Arts degree and no more than 68 semester hours of academic credit (70 including two in physical education) toward the Bachelor of Science and Bachelor of Science in Engineering degrees.

Transfer to Engineering Technology

Technical institute graduates who wish to enter the engineering technology program at the University of North Carolina at Charlotte must meet the following requirements:

(1) Earn an Associate in Applied Science degree, or its equivalent, in a field appropriate to the option which the student plans to enter.

(2) Achieve an overall quality-point average of at least 2.2 (based on the 4.0 scale) on all courses taken at the technical institute. Exceptions to this requirement will be considered on the basis of individual merit.

(3) Complete satisfactorily the prerequisite background courses for the option which the student plans to enter.

Acceptance of the A.A.S. indicates the acceptance of 64 semester hours toward the Bachelor of Engineering Technology degree only. These hours become invalid when a student transfers to any other degree program.

Evaluation of Transfer Credits

Transcripts are evaluated by examiners in the Office of Admissions and the results are mailed to each applicant. Application of transferred credits to a major or related work is the responsibility of the department chairman of the major. Upon examination or interview he may disallow credits toward the major or related work or validate credits accepted but not assigned as major or related work.

In exceptional cases, students may secure the equivalent of transfer credit by passing previously arranged special examinations. (See *Credit by Examination.*)

Entrance Tests

All freshmen (and transfer students with fewer than 24 semester hours of acceptable credit) are required to take the American College Testing Program (ACT) or the Scholastic Aptitude Test (SAT) of the

College Entrance Examination Board. These tests are administered at test centers throughout the United States. Either test may be used to satisfy entrance requirements.

For students returning from the Armed Services or for those who find it impossible or difficult to take the entrance tests on one of the regularly scheduled dates, the University provides for the institutional adminstration of the Scholastic Aptitude Test. Further information may be obtained from the Counseling Center at UNCC.

You should secure application forms and test information from your high school counselor or by writing to:

American College Testing Program
Post Office Box 168
Iowa City, Iowa 52240

Educational Testing Service
Post Office Box 592
Princeton, New Jersey 08540

Educational Testing Service
Post Office Box 1025
Berkeley, California 94701

Admission of Out-of-State Students

Undergraduate students from out-of-state schools are admitted in accordance with the same policies governing North Carolina residents. Although limited by state laws to 15 percent of undergraduate students admitted, UNCC has been able to accommodate all qualified out-of-state applicants. The University seeks a diverse student body.

Admissions Acceptances

All applications are acted upon as soon as the admissions credentials are received. Normal processing procedures require four to six weeks. Applications from freshmen candidates are accepted after the junior year with the inclusion of the senior year courses for which the applicant is registered.

The applicant should take the SAT or ACT during the junior year or during the July administration of the tests in order to assure action upon his application early in the academic year. However, the University will consider test scores from any test administration.

Transfer applicants may be admitted conditionally at the beginning of the academic year. Transcripts should include the courses for which he is registered.

Applicants qualifying for admission prior to completing courses in progress may be granted conditional admission. Upon receipt of final or supplementary transcripts and notification of graduation, if applicable, applicants will receive a letter of final admission.

Entrance Deficiencies

Admission with deficiencies in mathematics or in foreign language may be granted to applicants whose records are otherwise acceptable.

Every effort should be made to remove entrance deficiencies during the summer before entering the University. Since the University offers no remedial work in mathematics, this deficiency should be removed before enrollment through a secondary school, a community college or technical institute, or through correspondence from the University of North Carolina at Chapel Hill or from North Carolina State University.

Students provisionally admitted without foreign language units must take two semesters of a beginning foreign language, for which they receive elective credit.

If students are allowed to enroll with entrance deficiencies, all deficiencies must be removed before registration for the third semester.

Special Students

Special students are those who are not candidates for degrees and who do not file complete academic credentials. They may enroll in undergraduate courses at UNCC until they have attempted a total of 18 semester hours with grade evaluation, but regular degree students will have preference for a place in classes. They are expected to conform to the standards required of all students. After reaching the 18 hour limitation, special students must be reviewed and be acceptable for regular degree status before enrolling again at UNCC.

Special students who have done previous college work (including UNCC) must be eligible to return to the institution last attended.

The student must be 18 years of age or over and must understand at the time of his registration that the work completed in special student status will be evaluated in terms of major department and degree requirements only after the student's formal admission to a degree program.

Admission of Transient Students

Students enrolled at other colleges and universities who have the written permission from their institutions to take specified courses at the University in a given semester term may be enrolled as transient students.

Admission of Auditors

Any student eligible for admission may register for any class for audit. The fees are the same as for classes taken for University credit.

The participation of auditors in class discussion and in tests or examinations is optional with the instructor. Auditors receive no University

credit. They are, however, expected to attend class regularly. Notation of an audited class on the student's permanent record is made, but no grade will be given.

Adding or dropping an audit course is governed by the same procedures as adding or dropping a course for credit, and is processed in the same way through the Registrar's Office.

Admission of Former Students

A student must apply for readmission if he did not complete the previous semester. Official withdrawal from either summer term does not necessitate an application for readmission.

Applicants should apply for readmission to the Office of Admissions in accordance with the application dates found on pages 8 and 36.

The records of all candidates for readmission to UNCC are reviewed giving consideration to financial obligations to UNCC and to their academic record, paying particular attention to the probability for eventual success both in terms of general degree requirements and in terms of major field requirements. This review will specifically include a recommendation from the candidate's major department or college.

Freshman Admissions Checklist

In order to complete an application for admission as a freshman to the University of North Carolina at Charlotte, a student must follow the steps below:

(1) Obtain an application from the Office of Admissions and return the completed form to that office.

(2) Include an application fee of $10.00. *The fee is not refundable.*

(3) Give the Secondary School Record and Recommendation Form to the proper high school officials. Transcripts are accepted after completion of the junior year. In order to be eligible for admission, a student must have completed 16 acceptable units, 13 of which must be in academic areas. In addition, the student must have completed courses as required by the degree program for which he applies.

(4) Present satisfactory scores on the American College Testing or the Scholastic Aptitude Test of the College Entrance Examination Board. The Admissions Committee will consider ACT or SAT scores from any of the national testings. Each applicant is responsible for having the official examination scores sent to the Office of Admissions. Only official reports will be considered.

(5) Present satisfactory evidence of good character. The applicant is responsible for requesting the principal or guidance counselor of the

secondary school to furnish the Office of Admissions with a recommendation.

(6) Upon conditional admission, complete and return the Medical Admissions Requirement Form to the University Health Service.

(7) Request a supplementary transcript be sent to the Office of Admissions upon graduation from high school.

Transfer Admissions Checklist

A large number of transfer students are accepted by the University of North Carolina at Charlotte each year. In order to complete an application for admission as a transfer student, the steps below must be followed:

(1) Obtain an application from the Office of Admissions and return the completed form to that office.

(2) Include an application fee of $10.00. *The fee is not refundable.*

(3) Request official transcripts from all colleges attended be mailed directly to the Office of Admissions.

(4) Give Confidential Statement(s) to proper college official(s). The recommendation is required from each college attended.

(5) Request an official transcript from the high school from which the student graduated.

(6) If the student is presenting fewer than 24 transferable hours, he must meet all freshman entrance requirements as well as those listed for transfer students.

(7) The student must present a minimum of an overall *C* average (2.0 based on the 4.0 scale, according to the UNCC method of computation) on all work attempted at all institutions previously attended.

(8) Junior and senior transfer students must declare an academic major.

(9) Upon conditional admission, complete and return the Medical Admissions Requirement Form to the University Health Service.

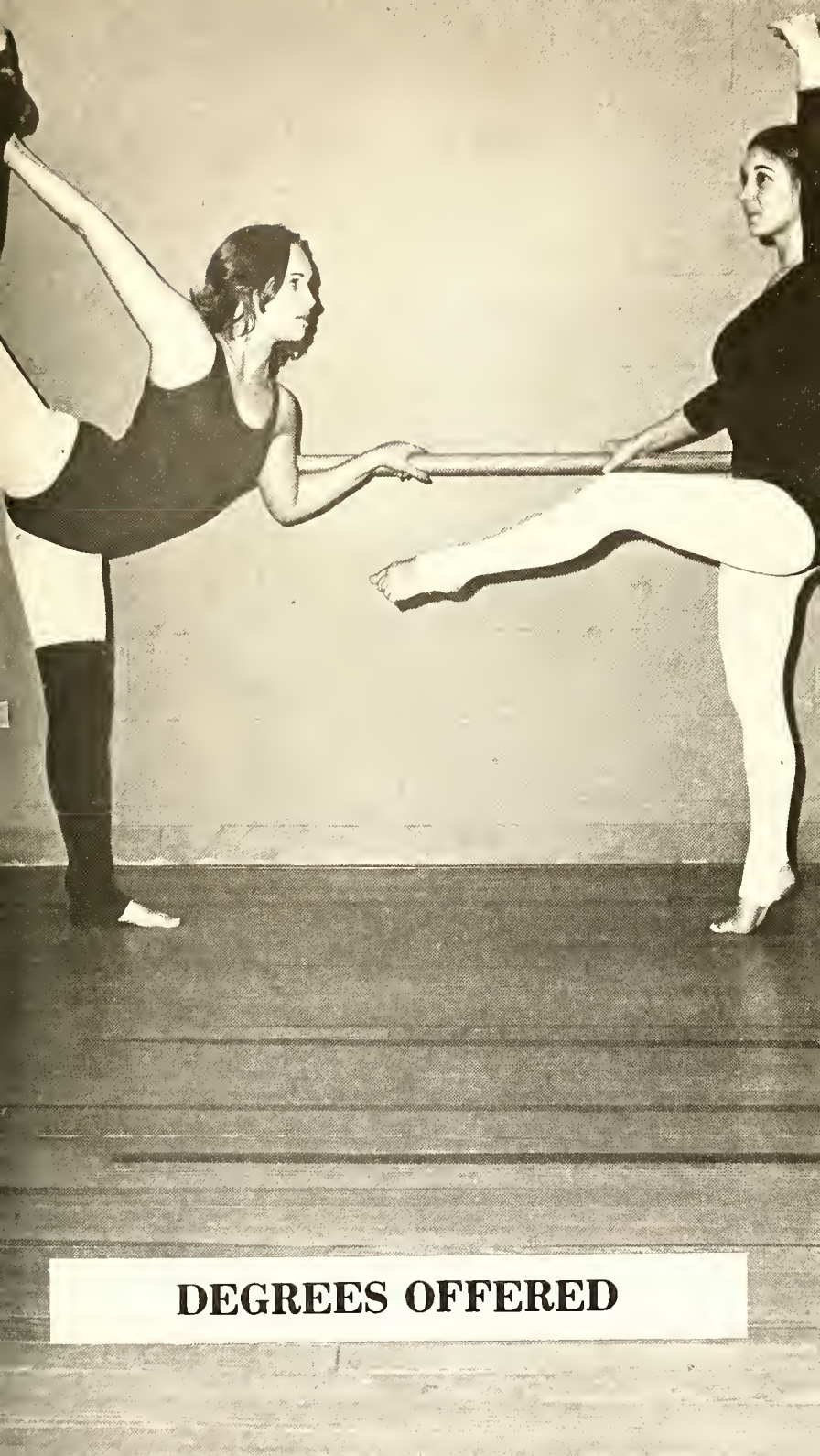
APPLICATION DATES

Due to the large number of applications the University is receiving and due to the rapid growth of this campus, the University may be required to announce an earlier cutoff date for application. Unless such

an announcement is made, applications may be submitted and completed acording to the following schedule:

Term of Entry	*Application Must Be Filed By*	*Application Must Be Completed By*
First Summer Term, 1975	May 1	May 15
Second Summer Term, 1975	June 15	July 1
Fall Semester, 1975	July 1	July 15
Spring Semester, 1975	December 1	December 15
First Summer Term, 1976	May 1	May 15
Second Summer Term, 1976	June 15	July 1

The University may alter these application dates in accordance with available resources and the enrollment limitation established by the North Carolina General Assembly.



DEGREES OFFERED

The following degrees are offered at the University of North Carolina at Charlotte:

Bachelor of Arts (*B.A.*)

With Majors in:

Architecture
Biology
Business Administration
Chemistry
Economics
English
French
Geography
German
History
Mathematics
Philosophy
Physics
Political Science
Psychology
Religious Studies
Sociology
Spanish

Bachelor of Architecture (*B.Arch.*) (5-year program)

Bachelor of Science (*B.S.*)

With Majors in:

Accounting
Biology
Chemistry
Law Enforcement and Administration
Mathematics
Nursing
Physics

Bachelor of Creative Arts (*B.C.A.*)

With Options in:

Art Creative Writing Dance Music Theater

Bachelor of Science in Engineering (*B.S.E.*)

With Options in:

Engineering Analysis and Design
Engineering, Science, Mechanics, and Materials
Urban and Environmental Engineering

Bachelor of Engineering Technology (*B.E.T.*)

With Options in:

Civil Electrical Mechanical

Master of Arts
Geography
Master of Arts in Education
Master of Education
Master of Management
Master of Science
Biology
Chemistry

DEGREES WITH DISTINCTION

Each of the undergraduate degrees except the B.C.A. (no grade point average computed) is awarded with high honor, when the graduate's quality point ratio is 3.80 or more, or with honor, when his quality point average is 3.40 or more but less than 3.80.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS

The degree of Bachelor of Arts is offered with majors in the following fields: architecture, biology, business administration, chemistry, economics, English, French, geography, German, history, mathematics, philosophy, physics, political science, psychology, religious studies, sociology and Spanish.

Course Requirements

The University of North Carolina at Charlotte has a minimum number of required courses to give the student maximum freedom in selection.

Following are the required courses:

Subject	*Semester Hours Required*
English	6
Option of Mathematics or Foreign Language***	6-8
Natural Science (One year of a laboratory science—biology, chemistry, Earth Science 101, 102, physics, or Psychology 101. Psychology 101 may be offered as a natural science or as a social science but not as both.)	8
Social Science (To be selected from economics, Geography 102, 201 or any 300 level geography course, history, philosophy, political science, psychology, religious studies or sociology.) A course in philosophy or religious studies may be offered as a humanity or as a social science but not as both.)	6
Humanities (To be selected from courses in literature, religious studies and philosophy. Courses in religious studies and philosophy may not fulfill both humanities and social sciences requirements.)	6
Total Number of Semester Hours Required for Graduation	120

Note: For the number of hours in the major department, see the requirements of that department in the section entitled *Courses of Study.*

*A course in logic may be substituted for one course in mathematics. The rest of a student's course work is under the advisement of his department.

**Or proficiency in language equivalent to completion of the fourth semester. This is to be determined by the score on the Language Placement Test.

Quality Point Requirements

In all courses attempted at the University, a minimum overall quality point average of 2.00 is required.

In all courses in the major department, a minimum overall quality point average of 2.00 is required.

Course Level Requirement

Junior and Senior students are required to have the corsent of their major department to enroll in any course below the 300 level not required in their degree program.

Residence Requirements

The minimum residence requirement for a Bachelor's Degree at the University of North Carolina at Charlotte is that a student must earn the last 30 semester hours of credit at the University. The last 12 semester hours of the work in his major field must be earned at the University. Exception to either of these hour provisions may be made upon the approval of the student's major department in consultation with the department offering the course or courses in question and with the approval of the dean of the college of the student's major.

Course work taken in residence shall be construed to mean course work offered by the University of North Carolina at Charlotte and taken on the Charlotte campus.

REQUIREMENTS FOR THE BACHELOR OF CREATIVE ARTS DEGREE

To receive the Bachelor of Creative Arts degree, a student must have completed a minimum of eight semesters of work (or its equivalent) and meet the following stipulations:

1. The last two semesters must be completed in residence in the B.C.A. program.

2. Upon consultation with his major adviser, a student forms a graduation review committee, consisting of: his major professor, one other professor in his field, two professors outside his field, and two students from his advisee group.

3. The candidate's portfolio, manuscript or performance must be appraised by his major professor and two other professors from outside the candidate's field.

4. The student must have a recommendation by a review board of three students from his field.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE

The degree of Bachelor of Science is offered with majors in the following fields of study: accounting, biology, chemistry, law enforcement and administration, mathematics, nursing and physics. The minimum requirements are the same as those for the degree of Bachelor of Arts listed on page 39.

FOREIGN LANGUAGE REQUIREMENTS

If a student elects the foreign language option, he is expected to achieve and demonstrate proficiency in a language other than English. Proficiency must at least equal that obtained by successful completion of 202-level language courses.

A student who presents four high school units in the same foreign language will be presumed to have satisfied the foreign language option of the general degree requirements even though he receives no University credit in that language.

The student who presents two units in a given language for entrance and who, by placement test, is found capable of enrolling in the 201 course in the same language, can satisfy the general degree requirement by successfully completing the 201 and 202 courses in that language.

The student who, on the basis of placement results, is advised to repeat the elementary course will receive credit for doing so. He may also choose to take an elementary course in another foreign language for elective credit.

A student provisionally admitted without foreign language units must take two elementary language courses for which he receives elective credit.

A student transferring to the University of North Carolina at Charlotte with two or more years of college work in an ancient or modern language not taught at the University, with a grade of at least *C* in each course, will be deemed to have fulfilled his foreign language requirement, provided he has completed satisfactorily two years of high school foreign language.

Students transferring from other colleges will take language placement tests in the language they intend to continue at the University, and they will be advised to register for the course for which they are best fitted, according to their placement test scores, for best results in their language sequence. They may not, however, receive credit again for courses the equivalent of which have already been accepted for transfer credit.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE IN ENGINEERING

The minimum residence requirement for a Bachelor of Science in Engineering Degree at the University of North Carolina at Charlotte

specifies that a student must earn the last 30 semester hours of credit at the University. The last 12 semester hours of the work in his major field must be earned at the University. Exception to either of these hour provisions may be made upon approval of the student's major department in consultation with the department offering the course or courses in question and with the approval of the dean of the College of Engineering.

Course work taken in residence shall be construed to mean course work offered by the University of North Carolina at Charlotte and taken on the Charlotte campus.

Course Requirements

English 101	3
Humanities and Social Studies Electives	15
Economics 201 or 202	3
Mathematics 105, 141, 142, 241, 271	15
Physics 101, 102, 222	11
Chemistry 101, 105	4
Science Elective	3
EGR 101A, B, C, 102A, B, C	6
ESM 241, 242, 311	9
Departmental Requirements*	42
Minor Option	15
Total Number of Semester Hours Required for Graduation	126

Quality Point Requirements

In all courses attempted at the University, a minimum overall quality point average of 2.00 is required.

In all courses attempted in the College of Engineering, a minimum quality point average of 2.00 is required.

Course Level Requirements

Junior and Senior students must have the consent of the College of Engineering to enroll in any 100 or 200 courses not required in their degree program. The engineering electives, the humanities and social science electives, and the technical or humanities electives will ordinarily consist of sequences of related courses and are subject to the prior approval of the College.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ENGINEERING TECHNOLOGY

The residence requirement for the Bachelor of Engineering Technology degree at the University of North Carolina at Charlotte specifies

*See the departmental section of this catalog for these specific requirements.

that the last 30 semester hours of credit must be earned at UNCC and that the last 12 semester hours of work in the major field must be earned at this University.

Course Requirements

Prerequisite courses for entering the Engineering Technology program, normally taken at a technical institute or junior college, are listed on page 128.

In addition, the following UNCC courses are required for the B.E.T. degree:

Title	*Sem. Hours*
Chemistry 101 (or other Natural Science)	4
Computer Science (CSC) 100	3
Economics 201 or 202	3
Humanities or Social Science electives	9
Free electives	6
Major electives	6
Engineering Analysis	9
Specified courses in major area of study (see p. 128)	24
Total	64
Transfer credit for A.A.S. degree	64
Total number of semester hours required for B.E.T. degree	128

Quality Point Requirements

In all courses attempted at the University, a minimum overall quality point average of 2.00 is required.

In all courses attempted in the College of Engineering, a minimum quality point average of 2.00 is required.

SECOND BACCALAUREATE DEGREE

Admission

A student earning his first baccalaureate degree at the University of North Carolina at Charlotte may continue his studies toward a second baccalaureate degree by filing an approved *Declaration of Program* at the Office of the Registrar UNLESS there is a lapse in enrollment between completion of the first degree and completion of the second degree.

Students holding baccalaureate degrees from other institutions, and other UNCC degree holders, must make application for admission to

the second degree program by the admissions date published in the University calendar and be approved by the appropriate department chairman and college dean.

Requirements

1) The major field and degree must be different from the first and all requirements for both the major and the degree satisfied.

2) A minimum of 24 semester hours beyond those applied to the first degree.

3) Students whose first degrees were from other institutions must also meet the UNCC residency requirements.

HONORS PROGRAM

The purpose of honors programs at the University of North Carolina at Charlotte is to stimulate the potentially creative, imaginative or brilliant student, to develop his potential and to give recognition for such development.

Honors work will emphasize independent study. The student may take honors work as early as his first semester. To qualify for graduation with honors recognition, the student must be admitted formally to honors candidacy by the University Honors Council at least three semesters before graduation and pursue honors work during the last three semesters before graduation.

To qualify for graduation with honors recognition the student must present no less than 12 semester hours of upper division honors work, at least six of which must be in research and/or the production of an aceptable honors thesis or its equivalent. The student may withdraw from honors courses without penalty, and the student may withdraw at any time from the program without penalty. He will be given credit towards graduation for any completed honors course.

When possible, non-candidates for honors recognition shall be permitted to enroll in and receive credit for honors courses with the grades of *HH, HP* or *No Credit* being recorded.

The grading system for honors courses, except as stated above shall be:

Pass Honors
Pass (no honors credit but course credit)
No Credit (no course or grade credit or penalty)

The credit system for honors courses is as follows:

a. Regular credit for lower division (freshman-sophomore) honors courses.

b. Double credit for the student receiving a *Pass Honors* grade in an upper (junior-senior) honors course; regular course credit for a student receiving a *Pass* grade in an upper division honors course, and no credit for a student receiving a *No Credit* grade.

BLACK STUDIES

Recognizing the problems unique to Black students and its responsibilities for addressing itself to these problems, the University has established a Black Studies Committee to develop a relevant Black Studies Program at UNCC.

The director facilitates the implementation of the program which will enable the University's Black students to come to an awareness of who they are, where they come from, where they are going and why.

Through a generous trust established by Miss Alice Tate of New York City, the University seeks to develop a variety of meaningful courses and cultural opportunities for its Black students.
and cultural opportunities for its Black students.

PREPARATION FOR PROFESSIONAL SCHOOLS

Students may begin preparation at the University of North Carolina at Charlotte for a number of professional careers. Depending upon the professional school's requirements, the student may wish to take a degree at the University of North Carolina at Charlotte or to transfer after one, two or three years.

Preparation for the following programs is offered: Dentistry, Journalism, Law, Medical Technology, Medicine, Pharmacy and Social Work.

The student who plans to enter a professional school is advised to plan his program so that general requirements for the Bachelor of Arts or Bachelor of Science degree are met in addition to the requirements for the professional program being considered. The student planning to attend a professional school should inform his adviser of his plans. The student should become familiar with the requirements of the school which he plans to attend.

Dentistry and Medicine

The composite requirements for entrance to most medical and dental schools in North Carolina, South Carolina, Georgia, Tennessee and Virginia are as follows:

Biology	8 hours
Inorganic Chemistry	8 hours
Organic Chemistry	8 hours
Quantitative Analysis	4 hours

(*Required by half the schools surveyed*)

Physics ..... 8 hours
English ..... 12 hours
Foreign Language ..... 9-12 hours
(North and South Carolina only)

Journalism

A number of institutions accept graduate students in journalism with the background of a liberal arts degree. Other institutions accept students transferring to an undergraduate program at the junior year with a liberal arts background.

Law

The University suggests that the student planning to enter law school have an understanding of the value of English literature and composition, American history, psychology, logic and ethics, political sciences, economics, government, accounting, mathematics, sociology, Latin and modern languages. Preparation should include comprehension and expression in words, critical understanding of human institutions and values, and creative power in thinking. Thus, any of several majors with wisely selected electives might provide the broad educational background needed.

Medical Technology

The University, through affiliation with several schools of medical technology, offers programs leading to baccalaureate degrees in biology and chemistry, with training in medical technology. Students interested in this four-year program are advised to check the more detailed listing under the individual departments and to consult with the appropriate adviser in the Department of Biology or Chemistry.

Pharmacy

Students planning to seek a Bachelor of Science in Pharmacy degree may spend either one or two years at the University of North Carolina at Charlotte before transferring to the University of North Carolina at Chapel Hill, where a total of five years, including those undertaken on the Charlotte campus, is required for the degree.

For the student planning to spend one year at the University of North Carolina at Charlotte, the following courses are required:

English 101, 102
Social Science (2 semesters)
Biology 101, 205, 205A; or 221, 345
Mathematics 101, 120
Chemistry 101, 102
Physical Education (2 semesters)

For the student planning to spend two years on the Charlotte campus, the following additional courses are required:

Humanities (1 semester)
Economics 201
Physics 101, 102
Chemistry 231, 232
Electives (6 hours)

Social Work

For the student planning a career in social work, a major either in psychology with related work in sociology or a major in sociology with related work in psychology is recommended. Whichever major is chosen, the following courses should be included: Psychology 303 (Social Psychology), Psychology 305 (Psychology of Personality), Psychology 307 (Abnormal Psychology), Sociology 271 (Social Problems), Sociology 372 (Sociology of Deviant Behavior); Sociology 380 (Field of Social Work) and Sociology 481 (Methods of Social Work).

GRADUATE STUDIES

Master of Science in Biology

The Department of Biology at the University of North Carolina at Charlotte offers a Master of Science degree program. Open to qualified students who have completed a bachelor's degree program including at least 24 hours in biology, the course of study includes a minimum of 32 hours in graduate work.

For admission, an overall quality point average of 2.50 (on the four-point scale) on the applicant's previous work beyond the high school is required, and the average of the major course work is normally 3.0 point or better for full admission status.

Application is made to the Director of Graduate Studies, and full supporting documents, including the Graduate Record Examination scores, are required. Application for candidacy to the degree will be made following successful completion of substantial course work as directed by the student's adviser and committee.

For further information contact the chairman of the Department of Biology or the director of Graduate Studies.

Master of Education and Master of Arts in Education

The University of North Carolina at Charlotte offers five graduate degree programs, two of which are directed primarily to the in-service school teachers in the Metrolina area. The Master of Education is designed for elementary school teachers and other special school personnel. The Master of Arts in Education is designed chiefly for the

secondary school teacher, with initial areas of academic concentration in English, history and mathematics. Additional areas are to be added as rapidly as resources become available.

Master of Science in Chemistry

The program leading towards the degree of Master of Science in Chemistry is a research-based program, requiring courses of a broad, general nature. Major emphasis is placed upon the research project and required thesis. All applicants must fulfill the general requirements for admission to graduate study at UNCC. Deficiencies will be identified by placement examinations given by the department just prior to the student's initial registration. Any deficiencies will be removed by taking appropriate undergraduate courses during the first year of residence. The candidate for the degree must complete a minimum of 30 semester hours, including at least 12 semester hours of work in courses approved for graduate credit and one to 16 hours of research and thesis credit. At least half the credit must be in courses open only to graduate students. A more detailed description of the program is presented in the *Graduate Catalog.*

Master of Arts in Geography

The M.A. in Geography offered by the University of North Carolina at Charlotte is designed to prepare individuals to apply the concepts and analytical methods of modern geography to understanding our complex and rapidly changing world. Graduates of the program will be prepared to work as professionals in planning, locational analysis, teaching and similar areas of interest.

The M.A. in Geography requires a minimum of 36 semester hours of graduate credits. Students normally complete a directed internship as part of an independent research project. The program of study is designed to accommodate both full and part-time students.

An undergraduate major in geography is not a prerequisite for admission, but applicants with weak backgrounds in the subject may be required to take some additional work. Applications are judged not only on their undergraduate academic records but also on the basis of interest, maturity and non-academic experience.

Master of Management

The University offers, through a 36-hour program, a Master of Management degree designed to develop candidates for leadership positions in complex organizations. Admission to this program is open to qualified graduates of recognized colleges or universities sities accredited by a regional or general accrediting agency. There are four major requirements for admission: (1) a generally satisfactory undergraduate record, (2) an acceptable score on the Admissions Test for Graduate Study in Business, administered by the Educational

Testing Service of Princeton, New Jersey, (3) a description of any significant work experience, and (4) three supporting letters of recommendation from professors or employers.

For further information, write: Director of Graduate Studies, Master of Management Program, University of North Carolina at Charlotte, UNCC Station, Charlotte, North Carolina 28223.

ACADEMIC REGULATIONS AND RECORDS

*Grading—Undergraduate**

The unit of measurement of University work is the semester hour. It ordinarily represents one lecture hour per week for one semester; however, a sequence of two or three laboratory hours is considered to be the equivalent of one lecture hour.

Letters are used to indicate the quality of work done. Each letter carries a quality point value for each semester hour of work attempted. The meaning of each letter with its accompanying quality point factor is:

Letter	*Description*	*Quality Points Per Semester Hour*
A	Excellent	4
B	Good	3
C	Fair	2
D	Passing	1
F	Failing	0
I	Incomplete	**
W	Withdrawal	**
AU	Audit	**
	Pass/No Credit	
H	Honors	**
P	Passing	**
N	No Credit	**
	Honors	
HH	High Honors	4
HP	Honors Passing	**
N	No Credit	**
	Creative Arts (No grade-point average is computed.)	
P	Progressing	
S	Satisfactory	
U	Unsatisfactory	

Grade of I

The Grade of *I* is assigned at the discretion of the instructor when a student who is otherwise passing has not completed all the work in the course. The missing work must be completed during the next semester in residence or within one calendar year after the end of the term in which the *I* was assigned, *whichever comes first.* If the *I* is not removed during the specified time, a grade of *F* is automatically assigned.

*For explanation of grading in the Bachelor of Creative Arts degree program, see page 159. For explanation of grading in the College of Engineering, see pages 98-99.

**Not used in the computation of grade-point averages.

Grade of W

No grade will be given for a course dropped on or before the last day to drop courses without grade evaluation. When a student withdraws from a course after that date, as indicated on the Academic Calendar, but before the end of a semester, and if in the opinion of his instructor he is passing at the time of withdrawal, he will receive the grade of *W*. Courses given the grade of *W* do not count as hours attempted. The time of withdrawal is the time the drop card is accepted by the Registrar's Office.

Quality Point Ratio

A student's quality point ratio at the University of North Carolina at Charlotte is determined by multiplying the number of quality points for each grade by the number of hours received in that course and adding all accumulated quality points together, then dividing by the total number of hours the student has attempted, except those for which the student has received a grade of *W, I* or *U*. In computing the quality point ratio, only those credits attempted at the campus of the University of North Carolina at Charlotte are included.

Grading—Graduate

A different grading system is employed in reporting performance in graduate studies. The system of grades which is authorized for graduate credit enrollment is published in the *Graduate Catalog*.

Grade Reports

A report of final grades is mailed to each student at the close of each term unless a student requests, in writing, that his copy be mailed directly to a parent or guardian.

Parents and students are urged to confer with one another and arrive at a mutual understanding of the person and address to whom the grade reports are to be sent.

Special reports of unsatisfactory achievement are sent to the students concerned near the middle of each regular semester.

Transcripts of Records

Upon written request by the student, an official transcript of his academic record will be issued to the person or institution designated, provided that all the student's obligations to the University have been settled satisfactorily.

Each student is entitled to one transcript without cost, regardless of how early in his academic career the request may be made. A fee of $1 per copy should accompany subsequent requests.

Requests should reach the Registrar's Offfice at least one week before the date the transcript is needed.

Registration For Credit

Registration in any course is limited to the first week of a semester and the first three days of classes of a summer term. No credit will be given to a student for a course unless he is properly registered for it.

Assignment of Academic Advisers

Each student entering the University of North Carolina at Charlotte is assigned an adviser. Usually the adviser will be in the major field chosen by the student. Advisers are also supplied for those students who have not chosen a major field.

Changing of Degree and Major

A student may change from one degree or one major to another with the approval of the chairman of the department of his new major.

Course Load

A load of 15 semester hours constitues a normal full semester program, but a student may register for less work. Any undergraduate student carrying 12 or more semster hours will be considered a full-time student by the University. A full load for graduate students consists of nine semester hours.

Course load is dependent on two factors: the scholastic ability of the student as reflected by his scholastic record, and available study time. It is suggested that a student whose part-time employment totals 20 hours a week should not carry more than 10 semester hours. A student working 40 hours a week should not carry more than seven semester hours.

Adding or Dropping a Course

In order to add or drop a course after the registration period, a student must secure written permission from his adviser and complete the necessary procedure as prescribed by the Registrar's Office. No student will be permitted to add a course or change sections of a course after the first week of a semester or the first three days of classes in a summer term.

A student who withdraws from a course after the last day to drop courses without grade evaluation will receive a grade of *W* if, in the opinion of his instructor, he is passing at the time of withdrawal, and will receive a grade of *F* if, in the opinion of his instructor, the student is failing the course at the time of withdrawal.

Withdrawal

Any student voluntarily leaving the University before the close of the term must withdraw officially. He initiates the withdrawal procedure at his major department. A student who is unable to appear in person may notify the Registrar's Office of his withdrawal by a letter.

Any person who leaves the University before the close of a term without withdrawing officially will receive a grade of *F* in all courses for which he is registered.

College Credit in Escrow

The University offers a program for highly qualified high school students to take college level courses for credit. Students who satisfactorily complete courses will have their records kept for use at the University or for transfer to another institution of higher learning.

Those recommended for College Credit in Escrow should be students who have high ability in a specialized discipline. The recommendation is normally made through the office of the superintendent of the school district.

Information and applications should be directed to the Vice Chancellor for Academic Affairs at UNCC.

Transfer Credit

Course work undertaken at other accredited institutions may be transferred to the University, subject to the following regulations:

Upon Transfer

1. No credit below *C* level will be accepted; no quality points transfer.
2. Courses accepted must be appropriate for approved University programs and curricula.
3. A limited number of correspondence and/or extension courses may be transferred.

After Admission

1. The University is not obligated to accept any credit from another institution unless the student has obtained the prior approval of the dean of the college in which he is enrolled. A Permit for Transient Study form should be completed and filed in the Registrar's Office.

2. The correspondence and/or extension study limitation (3, above) applies.

Credit By Examination

A student may pass a specially prepared examination and receive credit for a University course without having to do the normal course work. The examination will be designated by the appropriate department and will be administered either by the department or the Counseling Center. Credit by examination will carry no quality points, and failures on such an examination will incur no quality-point penalty. A department may allow a student to take examinations for courses not then offered on the Charlotte campus, if it deems it appropriate to do so.

Challenge examinations in nursing courses are open to any student who is currently enrolled in the College of Nursing and who has had previous formal instruction in the subject area content for which he wishes to challenge for credit. Equivalency credit for nursing courses will be determined on the basis of written validation examinations in each clinical nursing course, and the applicant will be given credit only for those courses in which he attains a grade of C or better on the challenge examination. No challenge examination may be repeated. If an attempt at challenge is unsuccessful, the student will be required to enroll in the course for both theory and clinical laboratory experience. *No student may challenge a course for which he has already received a passing or failing grade at UNCC.*

Pass-No Credit Option

Every student will be permitted during his four undergraduate years to select a total of four courses in which he shall receive an evaluation of *H* (*honors*), *P* (*pass*) or *NC* (*no credit*). Only one such course will be selected during an academic year. Every course in the University is offered on this basis except when taken by a student for departmental credit toward his major or to satisfy all University degree requirements. Although units completed with *honors* or *pass* will count toward graduation, they will not be reckoned as part of the grade-point average.

This option is designed to encourage curiosity, exploration and experimentation in areas where a student has strong interests but little or no previous experience.

The student must declare his intention to take a Pass-No Credit option by the end of the add period in the semester.

Attendance

The instructional work of the University is designed for class attendance, and it is assumed that students will be present. Students who miss classes will be responsible for the work of those periods. A missed test may cost the student the advantage of a grade to be counted toward the final estimate since instructors are not required to give make-up tests.

No student may expect full credit unless he has attended at least 75 percent of the total class hours.

Classification of Students

At the beginning of the fall semester regular students working toward a bachelor's degree are classified on the basis of minimum earned semester hours as follows:

Classification	*Earned Semester Hours*
Freshman	1-23
Sophomore	24-51
Junior	52-89
Senior	90 or more

Requirements for Continued Enrollment

As a general rule, each student will be allowed to remain at the University of North Carolina at Charlotte for the first two semesters following his first enrollment or until 30 semester hours have been attempted at the University of North Carolina at Charlotte, whichever happens last.

As a general rule, the summer sessions at the University of North Carolina at Charlotte shall be open to all students previously enrolled, including students academically ineligible to continue during the regular academic year.

The following table will serve as a guide to help the student determine his eligibility to continue.

Hours of Credit Earned, Including Transfer Credit:	*Minimum Grade Point Average to Continue*
0-29	1.10
30-59	1.30
60-89	1.60
90-109	1.80
110-and over	1.90

After the student has earned 60 semester hours, he is expected to make at least a 2.0 quality point ratio for each semester.

No student will be suspended from the University of North Carolina at Charlotte at the end of any semester for which his quality point ratio is at least 2.20.

A student's quality point ratio is determined on the basis of the hours he has attempted at the University of North Carolina at Charlotte. However, the grade of *F* on the same course will not count against the student more than once.

Requirements for Progression in Nursing Program

In order to promote the progression of safe practitioners from one level to the next within the College of Nursing and eventually into the nursing profession, students:

1. must achieve a minimum grade of *C in each nursing course.*

    a. A grade of *C* or better is required in both theory and laboratory experience in each nursing course. The final grade will be recorded as a combined grade.

    b. Only one *D* in a natural science is acceptable for credit by the College of Nursing.

2. may not repeat a nursing course more than once. If a student repeats a nursing course and does not achieve a minimum of *C*, she will be asked to withdraw from the College of Nursing.

3. may not progress to the next level in the nursing curriculum until the prerequisite nursing courses have been completed.

4. may not attempt junior level nursing courses until Biology 101, 203, 205 and Chemistry 103 and 104 and sophomore level nursing courses have been completed.

5. may not attempt senior level nursing courses until all junior level nursing courses have been completed.

6. must meet the earned hour and cumulative QPR requirements for continuance as stated in the catalog of UNCC.

Academic Regulations for College of Engineering Majors

The academic regulations governing majors in the College of Engineering are somewhat different than those stated above. Refer to page 98 for these regulations.

Requirements for Removal of Academic Suspension

No student under suspension will be readmitted to the University if he does not completely satisfy the entrance requirements as stated elsewhere in this catalog.

In addition, a student who has been suspended by reason of failure to satisfy the requirements for continued enrollment as stated above will be ineligible for readmission until the expiration of the next semester following his suspension (except that he will be permitted to enroll in the Summer Session) or until he meets the requirements for continued enrollment. After readmission, he will be expected to satisfy the requirements for continued enrollment.

At the end of the semester in which the student fails to meet the requirements for continued enrollment for the second time, he will be suspended and may be readmitted only after meeting the requirements for continued enrollment.

The student has recourse for meeting the requirements for readmission by attending summer sessions at UNCC.

If a student attends another institution after suspension from the University of North Carolina at Charlotte, he may be readmitted, provided that he presents a minimum of 24 credit hours of acceptable work from that institution. In this case, he will be accepted as a transfer student and must satisfy the requirements for continued enrollment. (See page 57.)

NOTE: Readmission after suspension or after an incomplete semester, whether caused by withdrawal or suspension, is not automatic. A new application must be made and approval to return must be received. Included in the approval must be an acceptance from the department in which the student would carry his major. See page 34. (*Admission of Former Students.*)

Application for the Degree

Each student should make application for his degree on a form obtained from the Registrar's Office no later than the filing date specified in the University calendar. The application must be accompanied by the appropriate filing fee in effect at the time of the application. Degrees are awarded at Commencement exercises held at the end of the spring semester; however, the diploma will reflect the term in which all requirements were completed.

Student Responsibility

Every student is responsible for the proper completion of his academic program, for familiarity with the University catalog, for maintaining the

grade average required, and for meeting all other degree requirements, including attendance at the commencement exercises at which he will receive his diploma. His adviser will counsel him, but the final responsibility remains that of the student.

A student is required to have knowledge of and observe all regulations pertaining to campus life and student deportment. He is responsible for maintaining communication with the University, by keeping on file with the Registrar's Office at all times his current address, including ZIP Code, and telephone number.

Every student, while he is associated with the University, is expected to comport himself in campus and community life in a manner that will reflect credit upon himself and the University.

FINANCIAL INFORMATION

University Statement on Residency Status for Tuition Purposes

1. Quotation verbatim of the current North Carolina law on this subject:

   G.S. 116-143 .1(b)
   "To qualify for in-state tuition a legal resident must have maintained his domicile in North Carolina for at least the 12 months immediately prior to his classification as a resident for tuition purposes. In order to be eligible for such classification, the individual must establish that his or her presence in the State during such twelve-month period was for purposes of maintaining a bona fide domicile rather than for purposes of mere temporary residence incident to enrollment in an institution of higher education; further, (1) if the parents (or court-appointed legal guardian) of the individual seeking resident classification are (is) bona fide domiciliaries of this State, this fact shall be prima facie evidence of domiciliary status of the individual applicant and (2) if such parents or guardian are not bona fide domiciliaries of this State, this fact shall be prima facie evidence of non-domiciliary status of the individual."

2. University regulations governing residential classification of students are set forth in detail in "A Manual To Assist the Public Higher Education Institutions of North Carolina in the Matter of Student Residence Classification for Tuition Purposes." Each enrolled student is responsible for knowing the contents of this manual. Copies of the manual are available in the Registrar's Office for inspection upon request.

Tuition and fees

Charges for tuition and fees vary according to the student's status as a resident or nonresident of North Carolina. A nonresident student must pay a higher rate of tuition than a legal resident.

Tuition and fees are due and payable on the day of registration. Checks and money orders should be made payable to the University of North Carolina at Charlotte.

Students taking eight or more semester hours of work during a regular semester will be charged full tuition and fees. Students taking fewer than eight hours of work during a regular semester will be charged a prorated portion of tuition and fees as specified below. The charges which follow reflect the tuition and fees for the 1975-76 academic year.

Cost Per Semester For Eight or More Semester Hours	**Commuting Students*	*No. Carolina Resident Students*	*Out-of-State Resident Students*
Tuition	$120.00	$120.00	$ 900.00
General Fee	107.00	107.00	107.00
**Room and Board		512.50	512.50
Total	$227.00	$739.50	$1,519.50

Cost Per Semester For Five to Seven Semester Hours	**No. Carolina Students*	*Out-of-State Students*
Tuition	$ 48.00	$ 450.00
General Fee	39.00	39.00
Total	$ 87.00	$ 489.00

Cost Per Semester For Four or Fewer Semester Hours	**No. Carolina Students*	*Out-of-State Students*
Tuition	$ 24.00	$ 225.00
General Fee	17.00	17.00
Total	$ 41.00	$ 242.00

NOTE: Residence hall space is not available to students taking fewer than 12 semester hours.

All new full-time UNCC students (freshmen or transfers) will be required to pay a one-time $7 orientation fee.

Additional Expenses

No extra fees are charged for laboratories as such. However, all degree students in the Creative Arts program are charged a flat fee of $45 per semester. All students enrolled in Directed Projects in the Department of Creative Arts are charged $25 per semester.

The estimated average cost of books and supplies per semester is $65. Beginning students in architecture and engineering should allow an additional expense of $60-$75 for drawing instruments, slide rule and supplies. Uniforms and supplies for nurses will cost approximately $100.

In addition to the above, the student should take into consideration the costs of clothing, snacks, recreation, laundry, etc. in planning his expenses for each semester.

*The commuting student will not have the cost of room and board but should estimate his cost of travel to and from the campus. Out-of-state commuting students should use the cost of tuition listed in the third column in computing their total expenses each semester.

**The listing for room and board given above is for the seven day plan. In addition, the University offers a five day room and board plan available at a cost of $487.50.

The University reserves the right to make, with the approval of proper authorities, changes in tuition and fees at any time.

Housing

Admission to UNCC does not guarantee residence hall space. Arrangements for on-campus housing are made after admission with the Director of Residence Life. See the Correspondence Directory on the inside front cover for the proper address.

All housing applications for the full academic year must be submitted with a $50 pre-payment. This pre-payment is applied to spring semester room and board charges unless the student cancels his application for the spring semester by December 10, in which case, the $50 will be refunded.

Application Fee

Applicants for admission are required to submit a $10 application fee with the application form. The fee is not deductible and is not refundable.

Late Registration Fee

A fee of $10 will be charged for those registering after the designated registration period each semester. *The fee is not refundable.*

Applicants completing their applications before the initial registration day but whose applications could not be processed in time will not be assessed the late registration fee if required to register late.

Graduation Fee

Each member of the graduating class must pay a graduation fee of $15 at the time he applies for the degree. This fee includes the cost of the diploma and the rental of the cap and gown. No reduction of the fee is allowed for those receiving degrees *in absentia.* For graduate students, the cost of renting a hood is in addition to the $15 charge.

Registration of Motor Vehicles

Any student attending the University is required to register his motor vehicle(s) in order to park such vehicle(s) on campus. Only vehicles owned by the student, his spouse, his parent(s), or his guardian may be registered. Unless increased by the chancellor, the number of vehicles which a student may register is two.

Registration of motor vehicles is to be accomplished as part of the University registration at the beginning of the fall semester of each year or at the time when the student first registers in the University and at the beginning of the fall semester of each year thereafter. A motor vehicle acquired by a student during a semester is to be registered.

The motor vehicle registration fee for students, faculty, and staff members is as follows:

$20 per academic year beginning with the fall semester;

$12 for the period beginning with the spring semester and ending with the beginning of the next fall semester;

$ 8 for the period beginning with a summer term and ending with the beginning of the next fall semester;

$ 2 for one additional motor vehicle;

$ 1 for replacing lost or defaced permit.

Violators of University Parking Regulations will incur a civil penalty of $1.00, $3.00 or $5.00, depending on the seriousness of the violation. If not paid in five days, the penalty will be doubled and applied to the member's account with the University and collectable as a bad debt. Subsequent registration may be withheld for nonpayment.

Credit By Examination Fee

Fees for credit by examination are as follows: A written examination for a course will require a fee of $15. A laboratory examination requiring the arrangement of such things as laboratory materials will require a fee of $25. A combination of a laboratory and written examination will require a fee of $30.

Student Activities Fee

A part of the general fee provides students with a program of cultural, recreational and entertainment activities. It pays for admission to most athletic contests, dramatic productions, activities sponsored by the University Program Board, social and entertainment functions, and for subscriptions to the campus newspaper and literary magazine. The yearbook is provided free to all students taking eight or more semester hours of work each semester during the academic year. Other students may obtain a yearbook upon payment of $8.50.

Refunds

A student who officially withdraws from the University during the first two weeks of the semester will receive a refund of the full amount paid less a fee of $25.00. This applies to both full and part-time students. No requests will be approved after the end of the normal refund period unless the student can show undue hardship which caused him to withdraw from the University.

In the event a refund is approved as a result of hardship, the refund will be made pro-rata, based on the number of weeks between the beginning of the semester and the date the student officially withdrew from the University. Requests for a refund must be submitted in writing to the vice chancellor for business affairs.

In each summer session, a student who officially withdraws from the University during the first three class days will receive a refund of the full amount paid less a registration fee of $10. Under normal circumstances no refund will be made after the first three days of the summer session unless the student can show undue hardship which caused him to withdraw from the University.

Housing Refunds

The rental period for the residence halls is for the entire academic year beginning in August and ending with the end of the spring semester. Agreements entered into any time after the actual opening of the fall semester continue in effect until the end of the spring semester. These agreements are binding, and the student and/or guarantor shall be responsible for the full amount of charges, except as follows:

(a) Prior to July 1, this contract may be cancelled, without forfeiture of deposit, by written notification to the Housing Office.

(b) Between July 1 and August 20, this contract may be cancelled but with forfeiture of deposit.

(c) No refund of deposit and/or room rental charges will be made after the date on which semester charges are to be paid.

(d) Pro-rata refunds on the meal cost portion of the dining contract will be made to students who withdraw from the University.

(e) By the last day of classes of the fall semester, any student may cancel the Housing Contract for spring semester by notifying the Housing Office in writing of the intended cancellation.

Education For The Vocationally Handicapped

Students who have suffered a disability which renders them vocationally handicapped are eligible for aid provided by the North Carolina State Division of Vocational Rehabilitation. This aid takes the

form of services which include vocational counseling and guidance and placement. Payment of expenses such as training, medical treatment, room and board, books, fees and tuition may be available. A vocational rehabilitation officer is available in Charlotte for interviewing applicants. Appointments may be made by contacting the Vocational Rehabilitation Office located at 219 East Boulevard, 375-8686.

Veterans Benefits

The Office of the Registrar works with the Veterans Administration to assist in administering the various programs of benefit to veterans or eligible relatives of veterans. The veterans clerk in the Registrar's Office certifies enrollment and transmits necessary credentials and information to the proper Veterans Administration Office.

Admission to the University should be obtained before the student makes application for veteran's benefits. Application for a Certificate of Eligibility should be made to the nearest Veterans Administration Regional Office at least six weeks before the expected date of enrollment.

In order to be eligible for the full monthly allowance under any of the above laws, an undergraduate student must be enrolled for 12 or more semester hours of work, while a gradute student must be enrolled for nine or more semester hours. Those enrolled for fewer semester hours than the limits stated above will be eligible for part-time compensation. Students are responsible for reporting any change in enrollment status to the veterans clerk in the Office of the Registrar.

Children of Veterans

The North Carolina Department of Veterans Affairs awards scholarships for the children of certain deceased or disabled veterans. Those awarded "full" scholarships are entitled to tuition, mandatory fees, board allowance and room allowance; those awarded "limited" scholarships are entitled to tuition and mandatory fees. All inquiries should be referred to the North Carolina Department of Veteran Affairs, P.O. Box 26206, Raleigh, North Carolina 27611, telephone, Raleigh 829-3851.

Before the time of registration each eligible student who wishes to enter the University should:

1. Make application for admission following University procedures.

2. Make application for scholarship award to the North Carolina Department of Veterans Affairs.

Financial Aid

Financial assistance is available to University undergraduate students in several forms: scholarships, grants-in-aid, loans and part-time employment. The University makes every effort within the limits of its

available resources to encourage and assist students with seriousness of purpose to obtain a University education. A financial problem should not deter a student from submitting an application for admission.

How To Apply

To be considered for financial aid at the University of North Carolina at Charlotte, a student must have on file a University application for financial aid, the Parents' Confidential Statement from College Scholarship Service, and be accepted for admission to the University. The University application for financial aid may be obtained from the Student Aid Office. The PCS is available through the guidance counselors of all high schools or from the Student Aid Office of the University. The University of North Carolina at Charlotte participates in the College Scholarship Service of the College Entrance Examination Board. Together with other participants in CSS, the University subscribes to the principle that the amount of financial aid granted a student should be based upon financial need. The CSS assists colleges and universities and other agencies in determining the student's need for financial assistance. All students seeking financial assistance are required to submit a copy of the Parent's Confidential Statement form to the College Scholarship Service, designating the University of North Carolina at Charlotte as one of the recipients. The institutional application and the PCS should be submitted prior to May 1 in order to assure that they can be processed in time for an award to be made before fall registration. Any student submitting the required forms will be automatically considered for all types of financial aid which are available through the University.

The University seeks to assign the kind of aid best suited to the needs and qualifications of the student. In general, the awards are approved and announced proportionate to the demonstrated need of the student and his satisfactory record of achievement and school citizenship. All students will be given consideration regardless of race, creed, color or national origin.

Renewal of Financial Aid

Renewal of financial aid is based upon a student's making a clearly satisfactory record. After enrollment, the student should make application by April 1 for financial aid in the next year. The PCS will be required each year that a student applies for financial aid.

Loans

The Emergency Loan Fund—Students may borrow up to $25 for 30 days. There is a $.25 service charge, but no interest is charged on the loan. Students may borrow up to $100 for 60 days at an interest rate of three percent per annum. The student who consistently borrows from this program will be expected to file an application for financial aid. Normally, tuition and fees are not considered an emergency.

The Marlin McCasland Memorial Emergency Loan Fund—This fund, established by friends of Marlin McCasland as a memorial, is for the purpose of making emergency loans up to $25 for 30 days. There is a $.25 service charge, but no interest is charged on the loan.

Federal Insured Low Interest Loans—Qualified applicants may borrow up to $2,500 per year for educational expenses. The interest rate throughout the life of the loan is seven per cent per annum, simple interest. Borrowers whose adjusted family income is less than $15,000 are eligible for payment of the seven per cent interest by the federal government during the in-school, grace and authorized extension periods. Repayment begins on a date between nine and 12 months after a student completes his course of study or leaves school. The maximum repayment period is 10 years, although minimum repayment requirements may reduce this. Deferment of repayment may be authorized for service in the military, Peace Corps or VISTA or for any period that a student returns to full-time study.

The Prospective Teachers Scholarship Loan Fund provides funds for prospective teachers each year. The loans are made in the amount of not more than $900. The fund is administered by the State Superintendent of Public Instruction, Raleigh, North Carolina. All scholarship loans are evidenced by notes which bear interest at the rate of four per cent per annum from September 1 following fulfillment by a prospective teacher of the requirements for a teacher's certificate based upon the bachelor's degree. Scholarship loans, together with four per cent thereon, may be cancelled by teaching one full year in North Carolina for each annual scholarship received. Consideration for a scholarship loan is given on the basis of the aptitude, purposefulness, scholarship, character and financial need of the applicant. For detailed information about the program, write to Prospective Teachers Scholarship Loan Fund, State Department of Public Instruction, Raleigh, North Carolina.

Other loan funds are made available by organizations and individuals. These include the A.A.U.W. Loan Fund, the Charlotte Kiwanis Club Loan Fund, the Lions Club Loan Fund, the Rotary Club Loan Fund, the DAR Loan Fund and the Knights-Templar Loan Fund. Applications for these loans should be made directly to the organization.

Basic Educational Opportunity Grant (BEOG)

The Education Amendments of 1972 authorized a new program of financial aid, the Basic Educational Opportunity Grant. It is expected to provide awards to students of up to $1,400 for each undergraduate year. However, the grant cannot exceed the need of the student nor can it be for more than 50 per cent of the actual costs of attendance at the institution the student has chosen. Therefore, full entitlement at the University of North Carolina at Charlotte may be somewhat less than the prescribed $1,400.

Applications are available on request from the Financial Aid Office.

Every student who enrolled after April 1, 1973 should apply for BEOG to test eligibility for this entitlement program.

Scholarships

The Bonnie E. Cone Merit Scholarhip is awarded annually to students having high moral character and proven scholastic attainment whose further education at the University will, in the judgment of the scholarship committee, enhance the citizenship of the recipient and advance the service of the University of North Carolina at Charlotte as an institution of excellence.

Following is a list of additional scholarships and the names of individuals, corporations and foundations which provide scholarships:

Alcoa Foundation
Alpha Chapter of Alpha Delta Kappa
Alpha Sigma Chapter of Delta Kappa Gamma
Altrusa Club of Charlotte
American Business Women—Carolina Heritage Chapter
American Business Women—Carolina Charter Chapter
American Business Women—Mecklenburg Chapter
American Institute of Certified Public Accountants—Charlotte Chapter
American Society of Heating, Refrigerating and Engineers Scholarship
American Society for Metals
American Society for Quality Control
Paul Anthony Memorial Scholarship
AREME Shrine No. 3
J. Murrey Atkins Scholarship
Brycie Baber Scholarship
Barnhardt Manufacturing Company
Tom Black Memorial
Blair-Boone Scholarship Fund
Cannon Scholarship for Nursing
Carolina Yarn Association
Carolina Paper Board
Charlotte Association of Insurance Women
Charlotte Board of Realtors
Charlotte Business and Professional Women
Charlotte Civitan Club
Charlotte-Mecklenburg—NCEA
Charlotte Panhellenic Congress
The Charlotte Women's Auxiliary of the N.C. Pharmaceutical Association
Charlotte Woman's Club
Bonnie E. Cone Scholarship
Corporate Insurers
Jim Crockett Memorial
Sanford V. Davenport Scholarship
W. Cleveland Davis Scholarship
Charles C. Dudley Scholarship
Ernst & Ernst Achievement Scholarship
Executives' Secretaries, Inc.
Otto L. Giersch Scholarship
Harry P. Harding Scholarship
Bronna Watson Hackney Senior Nursing Honors Scholarship
Harrison-Wright Scholarship
Haskins & Sells Scholarship

David Henderson Memorial
Housewares Club of the Carolinas
Hynes Sales Company
Jefferson Standard Foundation Scholarship
Jeld-Wen-Wenco Scholarship
Kerley Scholarship for Nursing
Kokenes Awards
Lincoln/Jewell, Inc. Insurance Scholarship Fund
McEwen Scholarship
Enloe McLain Scholarship
Pierre Macy Scholarship
William Hugh McEniry Memorial
Mecklenburg Junior Chamber of Commerce
Mecklenburg County Medical Society
Mumaw Engineering
National Association of Accountants—Herbert Conner Scholarship
North Carolina Association of the American Institute of Certified Public Accountants—Charlotte Chapter
Nursing Honors Scholarship
Package Products Company, Inc.
Mr. and Mrs. Jesse W. Page
Peat, Marwick, Mitchell Accounting Scholarship
Pepsi Cola Bottling Company
Piedmont Club Scholarship
Pilot Club of Charlotte
Price Waterhouse Foundation, Inc.
Cecil Prince Scholarship
Professional Engineers Association—South Piedmont Chapter
Professional Engineers—Ladies Auxiliary
Puette Scholarship
Quota Club
The Ramseur Tutoring Fund
George A. Rawlings Scholarship
Refabco, Inc. Scholarship
George H. Roberts
Glenn G. Ritchie, Jr. Memorial Scholarship
Frank Sherrill Scholarship
Schoenith Scholarship-Loan
Servomation of Charlotte
Sheldon P. Smith Scholarship
Lonnie Sides Memorial
Sprague Electric Company
Joseph Carl Stepp Memorial
Charles H. and Clara Stone Scholarship
A.K. Sutton Scholarship
Mr. and Mrs. J.R. Thompson
Tate-Culbertson Scholarship for Black Students
UNCC Distaff Loan Fund
Cliff Westbrook Scholarship
Earle Whitton Scholarship
Mr. and Mrs. J.L. Winningham
Women in Construction of Charlotte
Women's Allied Auxiliary of N.C. Motor Carriers
Zonta Club of Charlotte

Employment

The Office of Student Aid assists the student in locating work on campus during his undergraduate years as part of the program of financial assistance. The University participates in the Federal Work-Study program and often couples part-time work with scholarship or loan assistance to meet the financial need of a student.

The Placement Office assists the student in obtaining part-time, full-time or summer employment off campus and, whenever possible, endeavors to relate work experience to career objectives. (See more detailed statement under *Placement* page 24.)

COURSES OF STUDY

Courses of Study

Following are courses offered by the University of North Carolina at Charlotte, listed by colleges and under the department or academic area concerned.

Courses are listed with a course number, the title of the course, the semester hours credit given in parentheses, prerequisites, if any, and a description of the subject matter of the course, with whatever requirements of class or laboratory hours are applicable. If no class hours are given, the number of class sessions per week is the same as the number of semester hours credit for the course.

Courses are, in general, numbered 100-199 for freshmen, 200-299 for sophomores, 300-399 for juniors and 400-499 for seniors. However, prerequisites for each course must be consulted to determine the student's eligibility to take that course.

Where a suggested degree program is not listed by a particular department, the student must arrange his program in consultation with the department. However, every student should consult the department of his intended major to be certain that he is following an approved program which will enable him to progress logically and successfully to the conclusion of his degree program, and to fulfill the requirements of both the University and the major department or professional sequence.

Students intending to teach should consult both the major department and the College of Human Development and Learning.

College of Architecture

Dean: Professor Anderson
Professor: Langhorst
Associate Professor: Gallis
Assistant Professors: Hauser, Marchant
Instructors: Busey, Newell, Searl, Vaseff
Lecturers (part-time): Kamphoefner, Shaeffer
Visiting Professor: Melaragno
Visiting Associate Professor: Morgan

The objectives of the College of Architecture recognize the fundamental concern of the architect: the design and control of the physical environment. This concern is with respect to a broad range of scales, the organization of single buildings as well as the organization of large groups of buildings at the scale of the city and the systematic integration of these structures with the fabric of technological, societal and geophysical forces.

The basis and method of study in the College is conducted in an intellectual climate which promotes inquiry, deals with the fundamentals of objective problem solving and teaches the essential balance between analysis and synthesis necessary to solve the problems of the physical environment facing contemporary society. In summary the administrative policy, the curricula and the teaching methods are designed to support most usefully the education of the architect in a rapidly changing world.

Teaching is highly individual, with each instructor working directly with small groups of students in the studio. The focus is primarily on process; however, through a program of visiting distinguished lecturers and exhibitions, the student is afforded the opportunity of direct contact with contemporary professional practice. Our task then is to search continually for and develop new techniques and methods of teaching problem solving, to develop new means of communication with other disciplines, to have a qualified and distinguished faculty, to develop significant research programs, to develop action-oriented programs in the community and to take full advantage of the resources of the University and the region.

The nature of the problems facing our society coupled with the unique location of Charlotte in a rapidly growing region create for us in the College of Architecture at the University of North Carolina at Charlotte some challenging opportunities for the education of the architect.

Graduates from the Bachelor of Arts in Architecture program are eligible for the professional program and could go on to graduate work in architecture or some related field such as planning, urban design, engineering or landscape architecture.

In addition, a graduate of the undergraduate program should be able to continue his studies in another discipline related to his education as an undergraduate or he may choose to leave the University with the Bachelor of Arts degree for outside employment.

The program is organized horizontally into first a Bachelor of Arts in Architecture and then a professional Bachelor of Architecture.

Bachelor of Arts in Architecture: This degree is a nominal four-year program requiring 132 semester credit hours, 68 hours in architectural course work, 18 hours in other courses required in the degree option, and 46 hours in electives, 14 of which are general education requirements by the University.

Bachelor of Architecture: The Bachelor of Architecture degree requires an additional 32 semester credit hours, 26 hours in architectural courses and six hours in electives for a total of 164 credit hours. The professional degree will be the one accredited by the National Architectural Accrediting Board and recognized by the State of North Carolina Architectural Registration Board for by-passing the professional equivalent exam. Any credits earned in the program will be applicable as education credits toward meeting the requirements of the State Board.

Vertically, the program is structured into three tracks: a Core Program, a Degree Option and Directed Electives.

Core Program: This consists of the sequence of seven-credit Studio/Seminars and Seminar/Directed Elective Option, totaling 56 hours for the Bachelor of Arts in Architecture and 70 for the Bachelor of Architecture. They are primarily problem-solving experiences supported by field work, research, lectures, reading, and workshops. In the later years of the program, the student is expected to contribute from his parallel area of resource to the studio. To this end the student not only develops skills and insights related to architecture per se, but in group process and decision making as well. The Seminar/Directed Electives Option is substantially part of the advising program in that it is intended to explore the resource of the University and potential roles in the evolving practice of architecture. The result is information upon which to base the selection of electives.

Degree Option: At the present, only one option is offered, that leading to the professional degree. This structure is intended to permit other options when there is demand and opportunity. This part of the program consists of a four-course math sequence, a two-course English sequence, a two-course building system sequence and a two-course history of architecture sequence, each a three hour course—a total in the Bachelor of Arts in Architecture of 30 hours. The Bachelor of Architecture requires, in addition, one course each of history and building systems and two in professional practice, each again a three-hour course, for an additional 12 hours or 42 hours total. These courses fulfill University general education requirements for mathematics, English and humanities for the Bachelor of Arts.

Directed Electives: Of the 46 hours in this track, eight hours must be in natural sciences and six hours in social sciences to meet the general education requirements of the University. With this proviso, the whole track is to be designed in accordance with some overall scheme leading toward a chosen future beyond attainment of the degree.

The responsibility for the design is the student's, but it is done with a faculty adviser and the insight from the Directed Electives Seminar. The opportunities vary but might be either degree studies or area studies in 1) environmental science: biology, botany, ecology, chemistry, earth science or physics; 2) human science: psychology, sociology, anthropology, criminal justice, education or political science; or 3) technology: creative arts, computer science, mathematics or urban engineering. It might be decided to gain a broad background by selecting courses from many areas.

Admission to the program requires, in addition to admission to the University, an interview with a member of the College Admissions Committee. Transfer students are given full hour credit for everything that is acceptable to the College Admissions Committee. Specific course credit is given when, in the opinion of the College Admissions Committee, the work is equivalent to that offered here. Thus, advanced standing in the program is possible.

CURRICULUM REQUIREMENTS FOR THE BACHELOR OF ARTS IN ARCHITECTURE AND THE BACHELOR OF ARCHITECTURE

FRESHMAN YEAR

Architecture 101 STUDIO/SEMINAR	7
Mathematics 120 (*Degree Option*)	3
English 101 (*Degree Option*)	3
Elective	4
	17

Architecture 102 STUDIO/SEMINAR	7
Architecture 104 SEMINAR/DIRECTED ELECTIVE OPTIONS	0
Mathematics 221 (*Degree Option*)	3
English 102 (*Degree Option*)	3
Elective	4
	17

SOPHOMORE YEAR

Architecture 201 STUDIO/SEMINAR	7
Mathematics 122 (*Degree Option*)	3
Elective	3
Elective	4
	17

Architecture 202 STUDIO/SEMINAR	7
Mathematics 311 (*Degree Option*)	3
Elective	3
Elective	4
	17

JUNIOR YEAR

Architecture 301 STUDIO/SEMINAR	7

Architecture 302 STUDIO/SEMINAR	7

Architecture 303 HISTORY (*Degree Option*) 3	Architecture 304 BUILDING SYSTEMS (*Degree Option*) 3
Elective 3	Elective 3
Elective 3	Elective 3
16	16

SENIOR YEAR

Architecture 401 STUDIO/SEMINAR 7	Architecture 402 STUDIO/SEMINAR 7
Architecture 403 HISTORY (*Degree Option*) 3	Architecture 404 BUILDING SYSTEMS (*Degree Option*) 3
Elective 3	Elective 3
Elective 3	Elective 3
16	16

Total Requirements for Bachelor of Arts in Architecture: 132 Hours

PROFESSIONAL YEAR

Architecture 501 STUDIO/SEMINAR 7	Architecture 502 STUDIO/SEMINAR 7
Architecture 503 HISTORY (*Degree Option*) 3	Architecture 504 BUILDING SYSTEMS (*Degree Option*) 3
Architecture 505 PROFESSION (*Degree Option* 3	Architecture 506 PROFESSION (*Degree Option*) 3
Elective 3	Elective 3
16	16

Total Requirements for Bachelor of Architecture: 164 Hours

COURSE DESCRIPTIONS

ARCHITECTURE

ARC 101. STUDIO/SEMINAR. (7) (15 hours per week contact). Prerequisite: major in College of Architecture or consent of the dean. Fundamental concepts of objective problem solving as related to the general nature of geophysical, societal and technological determinants of problems in the physical environment. A sequence of related projects in which the student develops an understanding of the principles of problem solving in architecture.

ARC 102. STUDIO/SEMINAR. (7) (15 hours per week contact). Prerequisites: major in College of Architecture, ARC 101. Non-major,

consent of dean. Development skill in the synthesis of geophysical determinants inherent in architectural problems in the physical environment. A sequence of related projects in which the student develops an understanding of the relationships between natural phenomena and architecture.

ARC 104. SEMINAR/DIRECTED ELECTIVE OPTION. (0) (2 hours per week contact). Seminars on the academic and professional relatedness of other disciplines to architecture. Discussion of the professional potentials generated through the choice of a specific group of courses in the Elective Option. Description of the interdisciplinary resources available within the University of North Carolina System.

ARC 201. STUDIO/SEMINAR. (7) (15 hours per week contact). Prerequisites: major in College of Architecture, ARC 102 and ARC 104. Non-major, consent of dean. Development of the ability to analyze geophysical determinants of architectural problems in the physical environment. A sequence of related projects in which the student develops an ability to analyze relationships between natural phenomena and architecture.

ARC 202. STUDIO/SEMINAR. (7) (15 hours per week contact. Prerequisites: major in College of Architecture, ARC 201. Non-majors, consent of dean. Development of knowledge and skill in the analysis and synthesis of technological determinants of architectural problems in the physical environment. A sequence of related projects in which the student develops the ability to analyze and use his analyses in understanding the relationships between technological processes, methods and tools and architecture.

ARC 301. STUDIO/SEMINAR. (7) (15 hours per week contact). Prerequisites: major in College of Architecture, ARC 202. Non-major, consent of dean. Development of knowledge and skill in the analysis and synthesis of societal determinants of architectural problems in the physical environment. A sequence of related projects in which the student develops the ability to analyse and use his analyses in understanding relationships between the goals, standards and expectations of social man and architecture.

ARC 302. STUDIO/SEMINAR. (7) (15 hours per week contact). Prerequisites: major in College of Architecture, ARC 301 and ARC 303. Non-majors, consent of dean. Use of analysis and synthesis for physical environmental problem solving in rural, urbanizing and urbanized environments.

ARC 303. HISTORY. (3) Prerequisite: ARC 202. Evaluation of geophysical and societal determinants affecting the solution of physical environmental problems from prehistoric to modern times. A series of lectures, films and symposia that deal with the historical relationships between natural and social forces and the development of philosophies, practices and physical organizations in architecture.

ARC 304. BUILDING SYSTEMS. (3) Prerequisite: ARC 301. Abstracted behavior of structural and environmental control systems in response to static and dynamic forces.

ARC 401. STUDIO/SEMINAR. (7) (15 hours per week contact). Prerequisites: major in College of Architecture, ARC 302 and ARC 304. Non-majors, consent of dean. Closed system organization of environmental determinants as related to parts of buildings, a building as a whole and groups of buildings.

ARC 402. STUDIO/SEMINAR. (7) (15 hours per week contact). Prerequisite: major in College of Architecture, ARC 401 and ARC 403. Non-majors, consent of dean. Open system organization of environmental determinants as related to individual buildings and groups of buildings.

ARC 403. HISTORY. (3) Prerequisite: ARC 303. Evaluation of technological determinants affecting the solution of physical environmental problems from prehistoric to modern times. A series of lectures, films and symposia that deal with the historical relationships between technological developments and architecture.

ARC 404. BUILDING SYSTEMS. (3) Prerequisite: ARC 401. Unique structural characteristics of various building materials as interdependent construction systems, and the unique characteristics of environmental control systems.

ARC 490. SEMINAR ON IDEAS IN DESIGN. (3) Prerequisite: consent of the instructor. An examination of aesthetics and the relationship of philosophic thoughts to design.

ARC 501. STUDIO/SEMINAR. (7) (20 hours per week contact.) Prerequisites: major in College of Architecture, B.A. in Architecture. Non-majors, consent of dean. Synthesis of closed and open system organization of geophysical, societal and technological determinants as related to groups of buildings, communities and urban systems.

ARC 502. STUDIO/SEMINAR. (7) (20 hours per week contact). Prerequisites: major in College of Architecture, ARC 501 and ARC 503. Non-majors, consent of dean. Synthesis of closed and open system organization of geophysical, societal and technological determinants as related to groups of buildings, communities and urban systems.

ARC 503. HISTORY. (3) Prerequisite: ARC 403. Analysis of the interaction of geophysical, societal and technological determinants affecting the solution of physical environmental problems from prehistoric to modern times. Projections of the future organization of rural, urbanizing and urbanized environments.

ARC 504. BUILDING SYSTEMS. (3) Prerequisite: ARC 501. Integration of structural and environmental control systems in response to static and dynamic geophysical, societal and technological determinants.

ARC 505. PROFESSIONAL. (3) Lecture and discussion; development of contract documents, alternative professional administrative procedures and the methods of synthesizing information from various sources relevant to the practice of architecture.

ARC. 506. PROFESSIONAL. (3) Lecture and discussion; development of contract documents, alternative professional administrative procedures and the methods of synthesizing information from various sources relevant to the practice of architecture.

College of Business Administration

Dean: Professor Palmer

Objectives

The purpose of the educational programs in the College of Business Administration is to provide a broad educational base which will help prepare the student for responsible leadership in business and professional life. The College is committed to the educational development of men and women through study of the concepts and analytical skills which will prepare the student for productive and meaningful careers.

The academic programs, methods of instruction and research efforts in the College are designed to maximize the opportunities for each student to develop his intellectual potential to the fullest. The programs reflect the application of evolving concepts and knowledge in accounting, economics, management, the behavioral sciences and the quantitative disciplines. The College of Business Administration, through its programs, attempts to serve effectively the needs of the business and professional community, other units of the University and the local, state and federal governments.

Programs

The College of Business Administration has approximately 1,200 students enrolled in its three academic programs. These are the Bachelor of Arts in Business Administration, the Bachelor of Science in Accounting, which offers full academic preparation for the Certified Public Accountant (CPA) designation, and the Bachelors of Arts in Economics.

The College also offers a Master of Management program at the graduate level. This program is designed for men and women who are fully employed and must undertake graduate study on a part-time basis. *Further information concerning the graduate program may be found in the UNCC Graduate Catalog.*

Programs are designed so transfer students from community colleges and other institutions may enter the program and complete their degree requirements in the last two years of their college work. Students planning to take their first two years in community colleges should inform their adviser or counselor of their intent to apply to UNCC so that their program may be tailored to facilitate transfer.

More than half of the students in the College of Business Administration are transfer students, and many students work at part-time jobs which are closely related to their field of study. Students working more than 20 hours per week should reduce their academic load.

Evening Programs and Summer Sessions

All courses required in the Business Administration and Accounting degree programs are offered in the evening. The Master of Management program is offered entirely in the evening. A full program of summer offerings is also available.

Scholarships

There are a number of scholarships available for both men and women studying in the College of Business Administration. Several of the scholarships are designated to recognize academic excellence in the junior and senior years. *Further information can be obtained from the Financial Aid Office at UNCC.*

Careers

Graduates in the Business Administration program may enter careers in:

Sales and Marketing
Banking and Finance
Transportation
Personnel
Manufacturing
Insurance
Public Administration

Accounting graduates find careers in:
Public Accounting
Internal Auditing
Government Accounting
Controllership

Economics Graduates often enter careers in:
Business Economic Analysis
Teaching
Research
Government

DEPARTMENT OF ACCOUNTING

Chairman: Professor Turner
Associate Professors: Drucker, Williamson
Assistant Professors: Godfrey, Higgins, Hinson
Instructor: Barnes
Lecturers (part-time): Amen, Gallier, Hockfield, Johnson

A major in Accounting leading to the B.S. degree consists of 27 semester hours of Accounting courses, 33 semester hours of related work in business administration, economics and mathematics as listed below.

Students who complete a major in Accounting will meet the educational requirements to take the North Carolina Certified Public Accountant Examination.

I. Accounting

Principles of Accounting (ACC 201 and 202)	6 hrs.
Managerial Cost Accounting (ACC 371)	3 hrs.
Intermediate Financial Accounting (ACC 374 and 375)	6 hrs.
Specialized Accounting Topics (ACC 471)	3 hrs.
Internal Control & Auditing (ACC 475)	3 hrs.
Federal Taxation (ACC 477 and 478)	6 hrs.

II. Business Administration

Marketing (BUS 311)	3 hrs.
Financial Management (BUS 316)	3 hrs.
Business Law (BUS 380)	3 hrs.
Industrial Management (BUS 400)	3 hrs.
Organization Theory (BUS 444)	3 hrs.

III. Economics

Principles of Economics (ECO 201 and 202)	6 hrs.

IV. Mathematics

Basic Concepts of Mathematics (MAT 101)	3 hrs.
Calculus (MAT 120)	3 hrs.
Algorithmic Languages (CSC 100)	3 hrs.
Statistics (MAT 122)	3 hrs.

In computing the quality point average in the major, all required courses are included.

RECOMMENDED CURRICULUM FOR THE B.S. DEGREE IN ACCOUNTING

FRESHMAN YEAR

English 101	3	English 102	3
Laboratory Science	4	Laboratory Science	4
Mathematics 101	3	Mathematics 120	3
Humanities	3	Humanities	3
Elective (1)	2	Elective (1)	2
	15		15

SOPHOMORE YEAR

Principles of Economics (ECO 201)	3	Principles of Economics (ECO 202)	3
Algorithmic Languages I (CSC 100)	3	Statistics (MAT 122)	3
Principles of Accounting (ACC 201)	3	Principles of Accounting (ACC 202)	3
Elective (2)	6	Elective (2)	6
Elective (2)	6	Elective (2)	6
	15		15

JUNIOR YEAR

Intermediate Financial Acct. I (ACC 374)	3
Marketing (BUS 311)	3
Organization Theory (BUS 444)	3
Electives (2)	6
	15

Intermediate Financial Acct. II (ACC 375)	3
Industrial Management (BUS 400)	3
Managerial Cost Acct. (ACC 371)	3
Electives (2)	6
	15

SENIOR YEAR

Business Law (BUS 380)	3
Income Taxation for Individuals (ACC 477)	3
Financial Management (BUS 316)	3
Specialized Acct. Topics (ACC 417)	3
Elective (1)	3
	15

Internal Control & Auditing (ACC 475)	3
Advanced Income Taxation (ACC 478)	3
Electives (3)	9
	15

A minimum of 12 hours of electives must be taken from courses other than those offered in the College of Business Administration. Behavioral sciences and communication courses are recommended for inclusion in the 12 hours of electives.

For those students planning to take the CPA exam, it is recommended that they take the following additional courses in their senior year:

	Credit Hours
Sales, Credit & Security Transactions (BUS 382)	3
CPA Preparation (ACC 479)	3

COURSE DESCRIPTIONS

ACCOUNTING

ACC 201. PRINCIPLES OF ACCOUNTING I. (3) A study of fundamental accounting principles, with emphasis on managerial use of accounting data and analysis of financial statements. Three lecture hours and one laboratory period of two hours a week. The laboratory period is optional unless scheduled for an examination.

ACC 202. PRINCIPLES OF ACCOUNTING II. (3) Prerequisite: Accounting 201. A study of basic accounting theory, corporate financing and reporting; financial planning; and an introduction to managerial accounting. Three lecture hours and one laboratory period of two hours a

week. The laboratory period is optional unless scheduled for an examination.

ACC 371. MANAGERIAL COST ACCOUNTING. (3) Prerequisite: Accounting 202. An analysis of the uses of accounting data in planning, controlling and decision-making processes of business enterprises. Three lecture hours and two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 374. INTERMEDIATE FINANCIAL ACCOUNTING I. (3) Prerequisite: ACC 202. An in-depth analysis of the requirements of outsiders (investors, auditors and governments) for information about the status and operations of firms. The application of various theories and concepts will be stressed. Three lecture hours and two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 375. INTERMEDIATE FINANCIAL ACCOUNTING II. (3) Prerequisite: ACC 374. A continuation of ACC 374 with an emphasis on accounting problems peculiar to corporate and partnership organizations and governmental units. Three lecture hours, two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 385. FEDERAL INCOME TAXATION. (3) Prerequisite: ACC 202. Open to non-accounting majors only. A study of federal income tax laws and regulations applicable to individuals and business organizations. Three lecture hours, two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 471. SPECIALIZED ACCOUNTING TOPICS. (3) Prerequisite: ACC 375. Specialized accounting topics with emphasis on consolidated statements. Three lecture hours, two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 475. INTERNAL CONTROL AND AUDITING. (3) Prerequisite: ACC 375. An analysis of the accounting control systems and the independent auditor's examination of the system and other evidence as a basis for expressing an opinion on financial statements. Three lecture hours, two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 477. INCOME TAXATION FOR INDIVIDUALS. (3) Prerequisite: ACC 202. A study of federal income tax laws and regulations applying to individuals. Three lecture hours, two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 478. ADVANCED INCOME TAXATION. (3) Prerequisite: ACC 477. A study of federal income tax laws and regulations applying to partnerships, corporations, estates and trusts, and estate, gift and inheritance taxes. Three lecture hours, two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 479. CPA PREPARATION. (3) Prerequisite: ACC 471. Intensive study of principals and techniques involved in the solution of advanced accounting problems encountered in public accounting practice. Three lecture hours, two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 490. CURRENT DEVELOPMENTS IN ACCOUNTING. (1) (2) or (3) May be repeated for credit. Prerequisite: consent of the department. A research project will be required. Topics will be selected from internal and external auditing, governmental accounting, income taxes, managerial accounting and accounting theory.

DEPARTMENT OF BUSINESS ADMINISTRATION

Chairman: Rush S. Dickson Professor of Finance Walls
Professor: Palmer
Associate Professors: Conrad, Trosch, Williams
Assistant Professors: Barnes, Brooks, Campbell, Geurin, Nilsson, Ruhe, Sage
Instructor: Swiger

The Department of Business Administration offers a program leading to the Bachelor of Arts Degree in Business Administration. To complete the program a candidate must complete the courses in the following areas:

I. Mathematics

Basic Concepts of Mathematics (MAT 101)	3 hrs.
Calculus (MAT 120)	3 hrs.
Algorithmic Languages I (CSC 100)	3 hrs.
Statistics (MAT 122)	3 hrs.

II. Economics

Principles of Economics (ECO 201 and 202)	6 hrs.
Industrial Relations (ECO 305) or Labor Economics (ECO 306)	3 hrs.
Monetary & Fiscal Policy (ECO 370)	3 hrs.
Industrial Organization (ECO 480)	3 hrs.

III. Accounting

Principles of Accounting (ACC 201 and 202)	6 hrs.
Cost Accounting (ACC 371)	3 hrs.

IV. Business Administration

Marketing (BUS 311)	3 hrs.
Financial Management (BUS 316)	3 hrs.
Business Law (BUS 380)	3 hrs.
Industrial Management (BUS 400)	3 hrs.
Organization Theory (BUS 444)	3 hrs.

In computing the quality point average in the major, all required courses are included.

TYPICAL BUSINESS ADMINISTRATION PROGRAM

FRESHMAN YEAR

English 101	3	English 102	3
Laboratory Science	4	Laboratory Science	4
Mathematics 101	3	Mathematics 120	3
Humanities	3	Humanities	3
Elective	3	Elective	3
	16		16

SOPHOMORE YEAR

Principles of Economics (ECO 201)	3	Principles of Economics (ECO 202)	3
Algorithmic Languages I (CSC 100)	3	Statistics (MAT 122)	3
Principles of Accounting (ACC 201)	3	Principles of Accounting (ACC 202)	3
Electives	6	Electives	6
	15		15

JUNIOR YEAR

Financial Management (BUS 316)	3	Marketing (BUS 311)	3
Cost Accounting (ACC 371)	3	Industrial Relations (ECO 305)	3
Monetary & Fiscal Policy (ECO 370)	3	Business Law (BUS 380)	3
Electives	6	Electives	6
	15		15

SENIOR YEAR

Business Policy	3	Industrial Management (BUS 400)	3
Organization Theory (BUS 444)	3	Industrial Organization (ECO 480)	3
Electives	9	Electives	9
	15		15

COURSE DESCRIPTIONS

BUSINESS ADMINISTRATION

BUS 311. MARKETING. (3) Prerequisite: ECO 202. Analysis of the activities which direct the flow of goods and services from producers to

consumers in modern economic systems; focuses on development of the student's ability to perceive and evaluate marketing problems and policies.

BUS 316. FINANCIAL MANAGEMENT. (3) Prerequisite: ACC 202. Principles and problems of business financing. Particular emphasis on financial planning and control.

BUS 380. BUSINESS LAW. (3) A study of the legal environment within which business operates; topics covered include contracts, sales, negotiable instruments, agency, partnerships and corporations.

BUS 382. SALES, CREDIT AND SECURITY TRANSACTIONS. (3) The study of the Uniform Commercial Code. Subjects covered include sale of goods, commercial paper, bank deposits and collections, letters of credit, bulk transfers, documents of title, investment securities and secured transactions.

BUS 390. TOPICS IN BUSINESS ADMINISTRATION. (3) May be repeated for credit. Prerequisite: consent of the department. Topics from the area of management and administration.

BUS 400. INDUSTRIAL MANAGEMENT. (3) Prerequisites: ECO 202 and MAT 120. The principles underlying the solution of problems in organization and operation of industrial enterprises. Emphasis placed on the management functions of planning, organizing, actuating and controlling business activity.

BUS 444. ORGANIZATION THEORY. (3) Prerequisites: ECO 202 and senior standing. An application of traditional and behavioral concepts to business organization and decision making. Primarily a study of the process of decision making in the business organization including the more modern feed back systems of good behavior.

DEPARTMENT OF ECONOMICS

Chairman: Professor Wubben
Associate Professor: Rogers
Assistant Professors: Davis, Jorgensen, Liner, Stone
Instructor: Farney
Lecturer (part-time): Ramsey

The Department of Economics offers two courses of study leading to a B.A. degree. Students may select a major in Economics with either a business administration emphasis or a social science emphasis.

Business Administration Emphasis

A major in economics, with a business administration emphasis, leading to the B.A. degree consists of 54 hours specified as follows:

I. Mathematics:
Basic Concepts of Mathematics (MAT 101)* 3
Calculus (MAT 120)* 3
Introduction to Computers (CSC 101) 3

II. Economics:
Principles of Economics (ECO 201 and 202)** 6
Economics of the Firm (ECO 325) *OR*
Microeconomic Analysis (ECO 322) 3
Money and Banking (ECO 315) *OR*
Macroeconomic Analysis (ECO 323) 3
Econometrics (ECO 312) 3
Industrial Organization & Public Policy (ECO 480) 3

III. Business Administration and Accounting:
Principles of Accounting (ACC 201 and 202) 6
Financial Management (BUS 316) 3
Two of the following:
Marketing (BUS 311)
Business Law (BUS 380)
Industrial Management (BUS 400)
Organization Theory (BUS 444) 6

IV. Economics Electives:
To be selected by the student from the 300 and 400 level offerings of the Department of Economics 12

Social Science Emphasis

A major in economics, with a social science emphasis, leading to the B.A. degree consists of 54 hours specified as follows:

I. Mathematics
Basic Concepts of Mathematics (MAT 101)* 3
Calculus (MAT 120)* 3
Introduction to Computers (CSC 101) 3

II. Economics
Principles of Economics (ECO 201 and 202)** 6
Microeconomic Analysis (ECO 322) 3
Macroeconomic Analysis (ECO 323) 3
Econometrics (ECO 312) 3
Evolution of Economic Thought (ECO 477) 3

III. Social Science Electives
Coursework to be selected from at least three of the following disciplines: geography, history, political science, psychology, sociology 15

*Will satisfy the general University requirement for mathematics or foreign language.
**Will satisfy the general University requirement for social science.

IV. Economics Electives

To be selected by the student from the 300 and 400 level offerings of the Department of Economics 12

In computing the quality point average in the major, all required courses except Mathematics 101 and Mathematics 120 are included.

It is recommended that students who plan to take graduate work in Economics take additional work in mathematics and consult with their advisers concerning this recommendation.

B.A. IN ECONOMICS WITH BUSINESS ADMINISTRATION EMPHASIS

FRESHMAN YEAR

English 101	3	English 101	3
Mathematics 101	3	Mathematics 120	3
Laboratory Science	4	Laboratory Science	4
Humanities	3	Humanities	3
General University Elective	3	General University Elective	3
	16		16

SOPHOMORE YEAR

Principles of Economics (ECO 201)	3	Principles of Economics (ECO 202)	3
Introduction to Computers (CSC 101)	3	Principles of Accounting (ACC 202)	3
Principles of Accounting (ACC 201)	3	General University Electives	9
General University Electives	6		15
	15		

JUNIOR YEAR

Economics of the Firm (ECO 325)	3	Money and Banking (ECO 315)	3
Econometrics (ECO 312)	3	Economics Elective	3
Financial Management (BUS 316)	3	Buesiness Elective	3
General University Electives	6	General University Electives	6
	15		15

SENIOR YEAR

Industrial Organization & Public Policy (ECO 480)	3	Economics Elective	6

Economics Elective	3
Business Elective	3
General University Electives	6
	15

General University Electives	9
	15

B.A. IN ECONOMICS WITH SOCIAL SCIENCE EMPHASIS

FRESHMAN YEAR

English 101	3
Mathematics 101	3
Laboratory Science	4
Humanities	3
General University Elective	3
	16

English 102	3
Mathematics 120	3
Laboratory Science	4
Humanities	3
General University Elective	3
	16

SOPHOMORE YEAR

Principles of Economics (ECO 201)	3
Introduction to Computers (CSC 101)	3
Social Science Elective	3
General University Electives	6
	15

Principles of Economics (ECO 202)	3
Social Science Elective	3
General University Electives	9
	15

JUNIOR YEAR

Microeconomic Analysis (ECO 322)	3
Econometrics (ECO 312)	3
Social Science Elective	3
General University Electives	6
	15

Macroeconomic Analysis (ECO 323)	3
Economics Elective	3
Social Science Elective	3
General University Electives	6
	15

SENIOR YEAR

Economics Elective	3
Social Science Elective	3
General University Electives	9
	15

Evolution of Economic Thought (ECO 477)	3
Economics Electives	6
General University Electives	6
	15

ECONOMICS

ECO 201. PRINCIPLES OF ECONOMICS-MACRO. (3) Topics considered included the scope and methodology of economics as a social science, the measurement of national income, the theory of national income determination, money and banking and monetary and fiscal policy.

ECO 202. PRINCIPLES OF ECONOMICS-MICRO. (3) Topics considered include the operation of the pricing mechanism of a market economy, the industrial organization of our contemporary capitalistic economy, problems of economic concentration and of agriculture, the theory of income distribution, international economic relationships and comparative economic systems.

ECO 305. INDUSTRIAL RELATIONS. (3) Prerequisite: ECO 202. Systematic analysis of the sociological, economic and political forces affecting and affected by the work environment. Special emphasis on market structure, the small group, the legal environment and union structure.

ECO 306. LABOR ECONOMICS. (3) Prerequisites: ECO 201 and 202. The economic implications of basic phenomena in the field of labor, including wage and employment theory, collective bargaining, unemployment and social insurance. Historical and legal forces affecting the work environment are covered.

ECO 312. ECONOMETRICS. (3) Prerequisites: MAT 120 and CSC 100 or 101. An exposition of relevant economic parameters utilizing regression analysis and in-depth studies of relationships between explained and explanatory variables. Topics include simple and multiple regression and correlation, matrix algebra and tests of significance, all as related to the modern theory of econometrics. Frequent use of "packaged" computer programs will be made throughout the course.

ECO 315. MONEY AND BANKING. (3) Prerequisites: ECO 201. The characteristics and functions of money in the modern economy. The operation of the U.S. banking system; monetary theory and policy.

ECO 322. MICROECONOMIC ANALYSIS. (3) Prerequisites ECO 201 and 202. This course deals with various aspects of microeconomic analysis with its primary emphasis on the theory of utility and production functions. A detailed discussion of resource allocation is undertaken for the determination of optimum output and pricing by a firm operating under various market situations such as pure competition, monopoly, oligopoly and imperfect competition. Emphasis is placed on distribution and welfare theories.

ECO 323. MACROECONOMIC ANALYSIS. (3) Prerequisites: ECO 201 and 202. Pre-or-Corequisite: ECO 312. An analysis of economic aggregates, primarily of income determination. Special emphasis on the development of macroeconomic models and forecasting.

ECO 325. ECONOMICS OF THE FIRM. (3) Prerequisite: ECO 202. A consideration of economic analysis of particular importance to business firms with emphasis on decision-making. Topics covered include demand theory and forecasting: cost theory and analysis; price policies.

ECO 370. MONETARY AND FISCAL POLICY. (3) Prerequisite: ECO 201. An examination of the nature and content of economic behavior of the American economy. This course deals primarily with a critical examination of monetary and fiscal tools and their application with a view toward full employment, economic growth and price stability.

ECO 375. COMPARATIVE ECONOMIC SYSTEMS. (3) Prerequisite: ECO 202. An institutional and theoretical approach to competitive economics. Includes an analysis of the Marxian theoretical system as well as a comparison of capitalism, socialism and communism.

ECO 390. TOPICS IN ECONOMICS. (3) May be repeated for credit. Prerequisite: consent of the department. Topics from the areas of economic theory, economic development, consumer economics, welfare economics and current economic problems.

ECO 395. DIRECTED INDIVIDUAL STUDY. (Variable credit 1-3 hours. May be repeated for credit.) Prerequisites: junior standing and permission of the instructor and the department. This course involves the independent study of a theoretical and/or policy problem in a special area of economics. The student can pursue a particular problem to a depth much greater than can be undertaken within the scope of existing courses. The topics of the investigation may originate from the student or from the faculty member who will supervise the study.

ECO 416. PUBLIC FINANCE. (3) Prerequisite: Economics 370. The revenue and expenditure problems of governmental units. Intergovernmental financial relationships and the impact of federal fiscal policy upon the American economy.

ECO 435. ECONOMICS OF DEVELOPMENT. (3) Prerequisites: ECO 201 and 202. Different theories of economic growth and development are examined with a view to their application to varying economic and social systems. Current theoretical models are studied in order to determine their relevance to efficient allocation of resources to both the developed and the developing nations.

ECO 449. WORK-STUDY PROGRAM IN ECONOMICS. (3 to 6 hrs. credit, by determination of faculty committee.) Prerequisites: ECO 201, 202 and 312. Enrollment granted only by permission of a faculty committee from the College of Business Administration. Prior to enrollment, plans for the student's work assignment in this course must be completed. Assignments in government utilities, banking and other paid employment must utilize the techniques and principles learned in core requirements in economics. Work assignments require enough faculty contact with the student and employer to insure satisfactory performance by the student. Such assignments must be a minimum of

three months full-time, six months half-time and other proportional periods of time.

ECO 471. INTERNATIONAL ECONOMICS. (3) Prerequisites: ECO 201 and 202. A survey of trade theories from classical mercantilism to the contemporary version. A detailed discussion of balance of payments, foreign exchange rate, capital movements and monetary reform proposals is undertaken. Special attention is given to an evaluation of international financial organization and regional groupings.

ECO 477. EVOLUTION OF ECONOMIC THOUGHT. (3) Prerequisite: ECO 202. The development of the great economic ideas of value, distribution, employment, with special emphasis on the foundations of classical economic thought.

ECO 480. INDUSTRIAL ORGANIZATION AND PUBLIC POLICY. (3) Prerequisite: ECO 202. An examination of the characteristics of various types of industries—competitive, oligopolistic, monopolistic and monopolistically competitive—and of the questions of public policy in dealing with problems created by industrial concentration.

College of Engineering

Dean: Professor Barnette

The College of Engineering offers two undergraduate degree programs. The Engineering Technology program is designed to provide an opportunity for graduates of two-year associate degree engineering technology programs to continue their education at the baccalaureate level. Graduates from this BET program are especially prepared to fill the occupational gap, which now exists in industry, between the two-year technician and the professional engineer. This educational program is based heavily on the applied aspects of engineering. Details regarding this program are found under the Department of Engineering Technology section of this catalog.

The second program leads to a Bachelor of Science in Engineering degree and is described below.

Bachelor of Science in Engineering

The Bachelor of Science in Engineering curriculum offers professional engineering education which can be used as the foundation for several different career objectives:

1) Some students will wish to prepare for a career as professional engineers in industry, in business or in consulting.

2) Some will look toward graduate study in order to prepare for careers in research, development or teaching.

3) Still others will desire a more general and more liberal engineering education with the objective of keeping a variety of career avenues open.

Whatever the objectives, there are several essential components in a sound program of engineering study. The curriculum must include a substantial content: (1) in the humanities and social sciences, (2) in the physical sciences, (3) in the mathematics, and (4) in the engineering sciences. Also, (5) there must be an in-depth experience in creative engineering design. The student preparing for graduate study, while including all these components in his undergraduate program, will place special emphasis upon science, engineering science and mathematics. The student expecting to accept employment in industry after four years of study will wish to emphasize the engineering sciences and creative engineering design. A high percentage of engineering graduates ultimately take on executive and management responsibilities in industries and firms which are based upon engineered products and engineering services. Therefore, some students will want to construct an elective option which includes business administration and economics offerings, and courses which will strengthen their communication skills.

There are many students who have not settled upon career objectives by the time they enter college, and some who may not develop specific objectives until later in their four-year program of study. These persons, if they have aptitude and interest in both technical and non-technical areas of knowledge, have the opportunity to synthesize for themselves, with counsel and guidance, a program of study combining engineering and the humanities and social sciences. The combination of liberal and engineering education should offer the student an excellent opportunity to find meaning and self-fulfillment in a technological age, whatever career he may ultimately pursue.

The engineering curricula prescribed by the faculty of the University of North Carolina at Charlotte gives thorough attention to the five essential components of a sound program of study. Those elements which are considered basic to every program of study are specified in the curriculum outline and result in freshman and sophomore requirements which are the same for all engineering students, except for the electives in the humanities and social sciences.

The flexibility of the curriculum, through the use of *Minor Option* electives, provides the student an opportunity to develop an individualized program within one of the professional engineering departments: Engineering Analysis and Design; Engineering Science, Mechanics and Materials; and Urban and Environmental Engineering. By the careful selection of elective courses the student may achieve a specialization in one of the more traditional fields of engineering (electrical, mechanical, civil) or an undergraduate foundation for some newly emerging fields (biomedical electronics, ocean engineering).

Requirements for the
Bachelor of Science in Engineering Degree

English 101	3
Humanities and Social Studies Electives	15
Economics 201 or 202	3
Mathematics 105, 141, 142, 241, 271	15
Physics 101, 102, 222	11
Chemistry 101, 105	4
Science Elective	3
EGR 101 A, B, C; 102 A, B, C	6
ESM 241, 242, 311	9
Departmental Requirements*	42
Minor Option	15
	126

The sophomore, junior and senior years include additional work in mathematics, physical sciences, basic engineering sciences and humanities and social sciences as well as the engineering major specialization. These requirements are described under the departmental sections which follow.

*See the departmental section of this catalog for these specific requirements.

The core of the program is included in the departmental major requirement and a group of Minor Option electives. The Minor Option is to be a coherent collection of courses designed to meet the specific professional goal of the individual student. This elective package may be used in several ways: (1) to develop a second area of interest, e.g., business administration, foreign languages, humanities, social and behavioral sciences (2) to strengthen the major field of specialization; (3) to obtain significant depth within a particular area of specialization in his major field; (4) to build some strength in another engineering or technical field; (5) to strengthen the mathematics, science and engineering base preparatory to graduate study; (6) to support an interdisciplinary study program, e.g., biomedical electronics, computer science and engineering, biology and physiology related to ocean engineering.

Before undertaking any of the technical elective courses, the student will work out with his adviser a detailed study plan indicating the objectives of his educational program and how his choice of these electives meets these objectives. The requirement of pre-planning the technical and non-technical electives program is intended to assure maximum utilization of curriculum flexibility by actively involving the student in a personalized program of study which will be sound in the professional sense, will recognize and take advantage of his best motivations and highest capabilities, and will result in a broad and deep educational preparation for service to and fulfillment in the current technological society.

ACADEMIC REGULATIONS FOR COLLEGE OF ENGINEERING MAJORS

Grading - Undergraduate

The unit of measurement of University work is the semester hour. It ordinarily represents one lecture hour per week for one semester; however, a sequence of two or three laboratory hours is considered to be the equivalent of one lecture hour.

Letters are used to indicate the quality of work done. Each letter carries a quality point value for each semester hour of work attempted. The meaning of each letter with its accompanying quality point factor is:

Letter	Description	Quality Point Per Semester Hour
A	Excellent	4
B	Good	3
C	Fair	2
D	Passing	1
F	Failing	0
I	Incomplete	0
W	Withdrawal	0

Letter	Description	Quality Point Per Semester Hour
AU	Audit	0
H	Pass Honors	Not Included
P	Pass	in QPA
NC	No Credit	Calculations

Grade of I

The Grade of I is assigned at the discretion of the instructor when a student who is otherwise passing has not completed all the work in the course. The missing work must be completed during the next semester in residence or within one calendar year after the end of the term in which the *I* was assigned, whichever comes first. If the *I* is not removed during the specified time, a grade of *F* is automatically assigned.

Grade of W

A grade of *W* will be given only on or before 10 calendar days after the date on which preliminary unsatisfactory grade reports are due, or if the student withdraws completely from the University. The time of withdrawal is the date the drop card is received by the Registrar's Office.

Repeating a Course

A student who is enrolled in the College of Engineering and who has received a grade of *C* or better, *H*, or *P* in a course may repeat that course only if he has the prior approval of his counselor, department chairman and the dean of the College of Engineering (except for those listed as "may be repeated for credit"). Whenever a course in which a grade of *D* or *F* has been assigned is repeated, the last grade completely replaces the previous grade in computing the quality point average; however, all entries remain a part of the student's permanent academic record. Repeating a course more than once to raise a grade requires the prior approval of the dean of the College of Engineering.

Quality Point Ratio

The quality point ratio at the University of North Carolina at Charlotte for a student enrolled in the College of Engineering is determined by multiplying the number of quality points for each grade by the number of semester hours credit received in that course and adding all accumulated quality points together, then dividing by the total number of semester hours the student has attempted, except those for which the student has received a grade of *I, W, H, P or NC.* When a course is repeated, no additional credit hours accrue, and the quality points of the previous grade are replaced by those of the current grade.

Grading - Graduate

A different grading system is employed in reporting performance in graduate studies. The system of grades which is authorized for graduate credit enrollment is published in the *Graduate Catalog.*

Grade Reports

A report of final grades is mailed to each student at the close of each term unless a student requests, in writing, that his copy be mailed directly to a parent or guardian.

Parents and students are urged to confer with one another and arrive at a mutual understanding of the person and address to whom the grade reports are to be sent.

Special reports of unsatisfactory achievement are sent to the students concerned near the middle of each regular semester.

Transcripts of Records

Upon written request by the student, an official transcript of his academic record will be issued to the person or institution designated, provided that all the student's obligations to the University have been settled satisfactorily.

Each student is entitled to one transcript without cost, regardless of how early in his academic career the request may be made. A fee of $1 per copy should accompany subsequent requests.

Requests should reach the Registrar's Office at least one week before the date the transcript is needed.

Registration For Credit

Registration in any course is limited to the first week of a semester and the first three days of classes of a summer term. No credit will be given to a student for a course unless he is properly registered for it.

Assignment of Academic Advisers

Each student entering the University of North Carolina at Charlotte is assigned an adviser. Usually the adviser will be in the major field chosen by the student. Advisers are also supplied for those students who have not chosen a major field.

Changing of Degree and Major

A student may change from one degree or one major to another with the approval of the chairman of the department of his new major.

Course Load

A load of 15 semester hours constitutes a normal full semester program, but a student may register for less work. Any undergraduate student carrying 12 or more semester hours will be considered a full-time student by the University. A full load for graduate students consists of nine semester hours.

Course load is dependent on two factors: the scholastic ability of the student as reflected by his scholastic record and available study time. It is suggested that a student whose part-time employment totals 20 hours a week should not carry more than 10 semester hours. A student working 40 hours should not carry more than seven semester hours.

Adding or Dropping a Course

In order to add or drop a course after the registration period, a student must secure written permission from his adviser and complete the necessary procedure as prescribed by the Registrar's Office. No student will be permitted to add a course or change sections of a course after the first week of a semester or the first three days of classes in a summer term. No student will be permitted to drop a course after the time period specified under grade of *W* above.

Withdrawal

Any student voluntarily leaving the University before the close of the term must withdraw officially. He initiates the withdrawal procedure at his major department. A student who is unable to appear in person may notify the Registrar's Office of his withdrawal by letter.

Any person who leaves the University before the close of a term without withdrawing officially will receive a grade of *F* in all courses for which he is registered.

College Credit in Escrow

The University offers a program for highly qualified high school students to take college level courses for credit. Students who satisfactorily complete courses will have their records kept for use at the University or for transfer to another institution of higher learning.

Those recommended for College Credit in Escrow should be students who have high ability in a specialized discipline. The recommendation is

normally made through the office of the superintendant of the school district.

Information and applications should be directed to the vice chancellor for academic affairs at UNCC.

Transfer Credit

Course work undertaken at other accredited institutions may be transferred to the University, subject to the following regulations:

Upon Transfer

1. No credits below *C* level will be accepted.
2. Courses accepted must be appropriate for approved University programs and curricula.
3. A limited number of correspondence and/or extension courses may be transferred.

After Admission

1. The University is not obligated to accept any credit from another institution unless the student has obtained the prior approval of the chairman of the department in which he is enrolled.
2. The correspondence and/or extension study limitation (3, above) applies.

Credit By Examination

A student may pass a specially prepared examination and receive credit for a University course without having to do the normal course work. The examination will be designated by the appropriate department and will be adminstered either by the department or the Counseling Center. Credit by examination will carry no quality points, and failures on such an examination will incur no quality-point penalty. A department may allow a student to take examinations for courses not then offered on the Charlotte campus if it deems it appropriate to do so.

Pass-No Credit Option

Every student will be permitted during his four undergraduate years to select a total of four courses in which he shall receive an evaluation of *H* (honors, *P* (pass), or *NC* (no credit). Only one such course will be selected during an academic year. Every course in the University is offered on this basis except when taken by a student for departmental credit toward his major or to satisfy all-University degree requirements.

Although units completed with honors or pass will count toward graduation, they will not be reckoned as part of the grade-point average.

This option is designed to encourage curiosity, exploration and experimentation in areas where a student has strong interests but little or no previous experience.

The student must declare his intention to take a Pass-No Credit option by the end of the add period in the semester.

Attendance

The instructional work of the University is designed for class attendance, and it is assumed that students will be present. Students who miss classes will be responsible for the work of those periods. A missed test may cost the student the advantage of a grade to be counted toward the final estimate since instructors are not required to give make-up tests.

No student may expect full credit unless he has attended at least 75 percent of the total class hours.

Classification of Students

At the beginning of the fall semester, regular students working toward a bachelor's degree are classified on the basis of minimum earned semester hours as follows:

Classification	*Earned Semester Hours*
Freshman	1-23
Sophomore	24-51
Junior	52-89
Senior	90 or more

Requirements for Continued Enrollment in the College of Engineering

As a general rule, each student will be allowed to remain at the University of North Carolina at Charlotte for the first two semesters following his first enrollment, or, in the case of a part-time student, until the end of the semester in which he attempts his twelfth semester hour.

As a general rule, the summer sessions at the University of North Carolina at Charlotte shall be open to all students previously enrolled here, including students academically ineligible to continue during the regular academic year.

In order to remain in good standing the student's cumulative quality point ratio must be 2.00 or higher. The quality point deficit is the

number of additional quality points which are required to increase the student's cumulative QPA to 2.00. A student with a quality point deficit between one and 13 will be placed on academic probation. A student with a quality point deficit of more than 13 will be suspended (except as stated above).

An Engineering student's eligibility for continued enrollment is shown on a Table of Quality Point Requirements for Continued Enrollment in the College of Engineering. Copies of the table are available in the College of Engineering.

In determining a transfer student's eligibility to continue in the College of Engineering, his initial point in the table is considered to be at the minimum good standing level at the number of hours accepted at transfer.

A student will be suspended automatically if, after two successive semesters on probation (excluding summer sessions), he fails to achieve good standing.

Requirements for Removal of Academic Suspension

No student under suspension will be readmitted to the University if he does not completely satisfy the entrance requirements as stated elsewhere in this catalog.

In addition, a student who has been suspended by reason of failure to satisfy the requirements for continued enrollment as stated above will be ineligible for readmission until the expiration of the next semester following his suspension (except that he will be permitted to enroll in the summer session) or until he meets the requirements for continued enrollment. After readmission, he will be expected to satisfy the requirements for continued enrollment.

At the end of the semester in which the student fails to meet the requirements for continued enrollment for the second time, he will be suspended and may be readmitted only after meeting the requirements for continued enrollment.

The student has recourse for meeting the requirements for readmission by attending summer sessions at UNCC.

If a student attends another institution after suspension from the University of North Carolina at Charlotte, he may be readmitted, provided that he presents a minimum of 24 credit hours of acceptable work from that institution. In this case, he will be accepted as a transfer student and must satisfy the requirements for continued enrollment.

Any student who receives a probation or suspension should confer with his adviser to determine the conditions under which he or she may continue.

Student Responsibility

Every student is responsible for the proper completion of his academic program, for familiarity with the University catalog, for maintaining the grade average required and for meeting all other degree requirements, including attendance at the commencement exercises at which he will receive his diploma. His adviser will counsel him, but the final responsibility remains that of the student.

A student is required to have knowledge of and observe all regulations pertaining to campus life and student deportment. He is responsible for maintaining communication with the University, by keeping on file with the Registrar's Office at all times his current address, including zip code, and telephone number.

Every student, while he is associated with the University, is expected to comport himself in campus and community life in a manner that will reflect credit upon himself and the University.

COURSE DESCRIPTIONS

BASIC ENGINEERING

EGR 101 A, B, C. INTRODUCTION TO ENGINEERING PROBLEMS I. (1, 1, 1) An introduction to the concepts, techniques and tools used to solve engineering problems, including computational methods, engineering graphics and introduction to computer usage. NOTE: To satisfy BSE degree requirements, a student completes three courses of one credit-hour each.

EGR 102 A, B, C. INTRODUCTION TO ENGINEERING PROBLEMS II (1, 1, 1) Prerequisite: EGR 101 or consent of instructor. A continuation of EGR 101. NOTE: To satisfy BSE degree requirements, a student completes three courses of one credit-hour each.

EGR 490. SPECIAL TOPICS IN ENGINEERING. (Variable credit 1-4 hours. May be repeated for credit) Prerequisite: senior standing in engineering. This course will be devoted to specific new areas which are emerging in the various fields of professional engineering. Given at the senior level, the course will build upon and synthesize the knowledge the students have gained from the engineering science, mathematics and physical sciences stems of the core curriculum. The specific topics covered in each separate offering of the course will serve as the vehicle for teaching engineering analysis, synthesis and design, while simultaneously affording an opportunity for the students to point themselves toward an area of specialization.

EGR. 491. UNDERGRADUATE RESEARCH. (Variable credit 1-4 hours. May be repeated for credit) Prerequisite: permission of the department. This course involves the independent study of a theoretical and/or experimental problem in a specialized area of engineering. The student can pursue some particular area or problem to a depth much greater than can be undertaken within the scope of existing courses. The topics of the investigation may originate from the student or from the faculty member who will supervise the study.

CONTINUING ENGINEERING STUDIES

The College of Engineering sponsors various special educational programs for practicing engineers, technologists, technicians and others in addition to its regular academic degree programs and courses. These include conferences, short courses, seminars and other continuing education programs designed to aid those practicing in the technical professions and occupations to keep abreast of the latest developments in the rapidly expanding technology. The courses listed below are offered regularly on a periodic basis, while many others are offered on demand.

PROFESSIONAL ENGINEERING - BASICS. Forty-five hours of work reviewing mathematics, chemistry, economics and the basic engineering sciences as preparation for the Professional Engineering Basics (EIT or Exam I) Examination.

PROFESSIONAL ENGINEERING - APPLIED. Fifty-four hours of work reviewing applications in chemical, civil, electrical and mechanical engineering and engineering economics as preparation for the Professional Engineering Principles and Practice (Exam II) Examination.

SURVEYING. Eight hours of work reviewing land surveying as preparation for the land surveying examination.

Anyone desiring information on these courses or requesting special offerings may contact the Office of the Dean of Engineering.

LIBERAL ENGINEERING STUDIES

The impact of technology on man's present condition and future prospects has until now received little formal study by engineers despite their close involvement. The College of Engineering has two objectives in initiating a bridge from the engineering arts to the liberal arts. The first is to respond to a major concern on the part of many of those students *not* majoring in engineering. Many of them realize that there are important social and environmental problems resulting from the radical present and future changes in technology, and it is the aim of these Liberal Engineering Studies to put the problems and their possible technical solutions into perspective.

The following courses are intended for non-engineering students who wish to explore various aspects of the societal-technological interactions.

LE 111. TECHNOLOGICAL BASES OF SOCIETY I. (3) Concepts underlying the systems which relate directly to the life of the individual in relation to the field of engineering. Emphasis on scientific ideas which are relevant to the student—which he should understand to participate in the decisions of an age of rapidly changing technology. Specific topics include decision making, optimization, modeling and systems. This course is open only to non-engineering students. (May be taken with or without LE 151.)

LE 112. TECHNOLOGICAL BASES OF SOCIETY II. (3) Prerequisite: LE 111. A continuation of LE 111. Introduction to technological concepts which are applicable to the solution of problems of a social and economic, as well as a technical nature—problems which are rapidly becoming the frame of reference for contemporary society. Specific topics include patterns of change, feedback, stability and machines and systems. This course is open only to non-engineering students. (May be taken with or without LE 152.)

LE 151. TECHNOLOGICAL BASES OF SOCIETY - LABORATORY I. (1) Corequisite: LE 111. A laboratory course designed to illustrate the concepts presented in LE 111. Simulation of real-life situations using simple laboratory equipment. This course is open only to non-engineering students. Two laboratory hours per week.

LE 152. TECHNOLOGICAL BASES OF SOCIETY - LABORATORY II. (1) Prerequisite: LE 151; corequisite: LE 112. A laboratory course designed to illustrate the concepts presented in LE 112. A continuation of LE 151. This course is open only to non-engineering students. Two laboratory hours per week.

LE 311. TECHNOLOGY IN HISTORICAL PERSPECTIVE. (3) Prerequisite: junior standing. Selected historical cases in science, applied science and technology are reviewed to show the impacts that technological advances have had on man's world. Emphasis is placed on the technologies and their effect on man's physical environment rather than on the resulting change in man's viewpoint toward society, economics or politics. This course is designed for non-engineering students.

LE 314. PROBLEMS IN ENVIRONMENTAL CONTROL. (3) Prerequisite: junior standing. Study of a range of environmental problems of interest to the class. The tracing of problem cases to their technological origins, the identification of available, feasible, technological solutions to the specific problems treated. On site inspection of industrial sources of pollution will be made in a series of field trips. No credit toward degree requirements for any student in the College of Engineering.

LE 316. ENERGY, POWER AND CONSERVATION. (3) Prerequisite: junior standing. A survey of historic, current and future power sources and devices that includes waterwheels and windmills, steam engines and turbines, internal combustion and jet engines, fission and fusion reactors and geothermal, tidal and solar power. Fuel resource reserves, costs, benefits and conservation will be studied. No credit toward degree requirments for any student in the College of Engineering.

The second objective is to make special provisions for those students majoring in engineering who find that their areas of interest are broader than can be accommodated by existing professional engineering curricula. Under the Minor Option program of the engineering curriculum, these students can elect a planned series of courses totaling at least 15 semester hours in an area of specialized interest other than

engineering. The student undertaking this option will work with both his engineering career counselor and a faculty adviser from his selected area of interest in planning his program.

DEPARTMENT OF ENGINEERING ANALYSIS AND DESIGN

Chairman: Professor Wayne
Associate Professor: Allen
Assistant Professors: Okon, Smith
Lecturers: Jenkins (part-time), Pao (part-time)

A new type of professional, a systems engineer, is needed to assume a unique role in today's complex society. The curriculum of the Engineering Analysis and Design Department is structured to produce a graduate engineer who is just as specialized as his more traditionally trained colleague but with the capability of formulating solutions to problems that cut across the traditional boundaries. The systems oriented approach enables the engineer to cope with the synthesis and analysis of the performance of mechanical and electrical systems in particular and to extend this methodology to physical systems in general.

An integrated six-semester sequence of courses, emphasizing the systems approach to analysis, forms the core of this curriculum. These courses are designed to take advantage of the similarity of the concepts, analysis techniques and models associated with the various disciplines. Emphasis is placed on the utilization of the computer to assist in the formulation, analysis and design of large systems.

A laboratory sequence of five courses is designed to serve two purposes: (1) to teach the basic techniques of instrumentation and (2) to relate the analytical methods developed in the classroom to the performance of real physical systems.

The curriculum requirements are flexible enough so that the student may synthesize a program of study to achieve his particular objectives and his desired degree of specialization. This is done through the use of the minor option, with the guidance and approval of the student's career counselor. If further specialization and a high degree of competence in a particular area are desired, the student may be encouraged to seek an advanced degree.

This systems approach to analysis, coupled with a judicious choice of a minor option, provides the student with a balanced and well-rounded education in the fundamentals of engineering which permit him to assume an active and creative position in modern society.

The professional option in Engineering Analysis and Design is accredited by the Engineers' Council for Professional Development.

The departmental requirements for a major in Engineering Analysis and Design are:

EAD 252 - Laboratory I	1
EAD 211 - Linear Networks I	3
EAD 212 - Linear Analysis I	3
EAD 311 - Linear and Dynamic Systems I	3
EAD 312 - Linear and Dynamic Systems II	3
EAD 321 - Fundamentals of Mechanical Design	3
EAD 332 - Fundamentals of Electronics and Semi-Conductors	3
EAD 342 - Electromagnetic Devices	3
EAD 351 - Laboratory II	1
EAD 352 - Laboratory III	1
Directed Elective	3
EAD 411-Automatic Control Systems I	3
EAD 412-Automatic Control Systems II EAD 415-Mechanical Vibrating Systems	3
EAD 451-Laboratory IV	1
EAD 452-Projects Laboratory	2
ESM 341-Mechanical Behavior of Solids ESM 321-Introduction to Electromagnetic Fields	3
ESM 342-Fluid Mechanics	3
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CURRICULUM OUTLINE
FOR THE
BACHELOR OF SCIENCE IN ENGINEERING

ENGINEERING ANALYSIS AND DESIGN

FRESHMAN YEAR

Physics 101	4	Physics 102	4
Engineering 101 A	1	Engineering 102 A	1
Engineering 101 B	1	Engineering 102 B	1
Engineering 101 C	1	Engineering 102 C	1
Mathematics 141	4	Mathematics 105	1
English 101	3	Mathematics 142	4
	14	Humanities or S.S.	3
			15

SOPHOMORE YEAR

EAD 211	3	EAD 212	3
ESM 241	3	ESM 242	3
Mathematics 241	3	Mathematics 271	3
Chemistry 101	3	Physics 222	3
Chemistry 105	1	EAD 252	1
Economics 201	3	Humanities or S.S.	3
	16		16

JUNIOR YEAR

EAD 311	3	EAD 312	3
EAD 351	1	EAD 352	1
Directed Elective	3	EAD 332	3
EAD 321	3	EAD 342	3
ESM 321 or ESM 341	3	Minor	3
Humanities or S.S.	3	Humanities or S.S.	3
	16		16

SENIOR YEAR

EAD 411	3	EAD 412 or EAD 415	3
EAD 451	1	EAD 452	2
ESM 342	3	ESM 311	3
Minor	3	Minor	3
Minor	3	Minor	3
Science Elective	3	Humanities or S.S.	3
	16		17

COURSE DESCRIPTIONS

ENGINEERING ANALYSIS AND DESIGN

EAD 211. LINEAR NETWORKS I. (3) Prerequisite or corequisite: Mathematics 142. Introduction to Kirchoff's current and voltage equations using oriented linear graph techniques. Formulation of cutset and circuit matrices. Terminal equations of network elements. Formulation of the primary and secondary systems of equations by matrix methods. Network theorems and equivalence. Power and energy functions.

EAD 212. LINEAR ANALYSIS I. (3) Prerequisite: EAD 211. Prerequisite or corequisite: Mathematics 271. A unified study of models and dynamical properties of mechanical, electrical and hydraulic systems. Emphasis is placed on the development and utilization of realistic mathematical models of physical equations with step, pulse and sinusoidal driving functions using Laplace Transforms. The vector transform as an introduction to sinusoidal steady state. Sinusoidal steady state and frequency response of networks.

EAD 252. LABORATORY I. (1) Prerequisite or corequisite: EAD 212. The first in a series of laboratories designed to develop an understanding of the principles and theory of parameter measurement and instrumentation. Instruction in the use of laboratory equipment and the development and application of experimental techniques. Three laboratory hours per week.

EAD 258. BASIC ELECTRICAL ENGINEERING LABORATORY. (1) Corequisite: EAD 268. A laboratory designed to supplement the

student's knowledge and enhance his understanding of the principles and operation of electrical circuits, basic electronic devices and energy conversion devices. Not open to Engineering Analysis and Design majors. Three laboratory hours per week.

EAD 268. BASIC ELECTRICAL ENGINEERING. (3) Prerequisites: Physics 102 and Mathematics 144. A study of the fundamental concepts and methods of analysis used in electrical engineering. Topics to include: terminal characteristics of devices, analysis of d.c. and a.c. circuits, elementary operation of electronic devices, and electromechanical energy conversion devices. Not open to Engineering Analysis and Design majors.

EAD 311. LINEAR AND DYNAMIC SYSTEMS I. (3) Prerequisites: EAD 212. A unified study of models and dynamical properties of mechanical, electrical and hydraulic systems. Emphasis is placed on the development and utilization of realistic mathematical models of physical aspects of systems. Equation formulation, operational block diagrams and analog simulation. State variable techniques.

EAD 312. LINEAR AND DYNAMIC SYSTEMS II. (3) Prerequisite: EAD 311. A continuation of EAD 311 emphasizing system response characteristics in both the frequency and time domain. Introduction to system analysis techniques.

EAD 321. FUNDAMENTALS OF MECHANICAL DESIGN. (3) Prerequisite: ESM 242 or consent of the department. A study of the design process with examples drawn from the various engineering disciplines. Application of the basic principles of engineering to real world problems, including systems approach to mechanically oriented problems. Introduction to the concepts related to current engineering design problem areas such as noise, artificial environments and human factors.

EAD 322. MECHANICAL SYSTEMS DESIGN. (3) Prerequisites: ESM 341 or consent of the department. An introduction to the mechanical design and dynamic analysis of machine elements and systems; linkages, bearings, gears, springs and other mechanical components used in machine systems.

EAD 332. FUNDAMENTALS OF ELECTRONICS AND SEMICONDUCTORS. (3) Prerequisite: EAD 212. A study of fundamental concepts of principles embracing both vacuum tube and semiconductor theory. Semiconductor and vacuum tube parameters and characteristics. Small signal analysis and equivalent circuits. Rectifier circuitry, vacuum tube and gas tube power devices: thyratrons, ignitrons, etc. Photoelectric devices. Amplifier and oscillator characteristics and their configurations.

EAD 342. ELECTROMAGNETIC DEVICES. (3) Prerequisite: EAD 212. Magnetic circuits. Transformer principles, equations, circuits. Magnetic amplifiers. Incremental motion transducers. Field of distributed windings. Servo control transformers, selsyns.

EAD 351. LABORATORY II. (1) Prerequisite or corequisite: EAD 311. A study of the various generating, measuring and recording devices and evaluation of their accuracy. A study of the use of instrumentation to monitor operating systems and to determine the characteristics and behavior of physical devices. Three laboratory hours per week.

EAD 352. LABORATORY III. (1) Prerequisite: EAD 351. Prerequisite or corequisite: EAD 312. A continuation of EAD 351, emphasizing the experimental analysis techniques of modeling various systems and devices.

EAD 411. AUTOMATIC CONTROL SYSTEMS I. (3) Prerequisite: EAD 312. A study of transfer functions, block diagrams and signal flow graphs. Feedback control system characteristics. The performance and stability of feedback systems using root locus and frequency response methods. Time domain analysis of control systems. The design and compensation of control systems.

EAD 412. AUTOMATIC CONTROL SYSTEMS II. (3) Prerequisite: EAD 411. A study of state space techniques and useful state space methods. System stability. Controlability and observability of linear systems. The formulation of the state equations for discrete-time systems and the analysis of these systems by matrices. Analysis of nonlinear systems. Optimal control system studies.

EAD 413. NONLINEAR ANALYSIS. (3) Prerequisite: EAD 312. Solutions of nonlinear problems using numerical methods, graphical methods, phase plane plots, analysis of singular points and analytical techniques. The use of analogs and duals for writing equations. The use of the analog computer and digital computer to solve nonlinear problems.

EAD 414. NETWORK SYNTHESIS. (3) Prerequisite: EAD 312. Positive real functions, their properties and methods of testing. Driving point synthesis of LC, RC and RL networks into Foster and Cauer networks. One terminal pair RLC network synthesis using the Brune and Bott-Duffin methods. Realization of two terminal pair networks by ladders, Cauer networks, lattices and Darlington networks. Approximation method.

EAD 415. MECHANICAL VIBRATING SYSTEMS. (3) Prerequisite: EAD 212. A study of free and forced vibrations of systems with multidegrees of freedom. Transient vibrations, analog simulation, non-linear vibrations and the vibration of continuous systems.

EAD 421. MACHINE ANALYSIS AND DESIGN I. (3) Prerequisite: EAD 322. Senior standing. Technical application of the basic principles of the mechanical science to the analysis of machines and mechanical systems. Methods of design of typical machine elements. Strength and deflection requirements.

EAD 422. MACHINE ANALYSIS AND DESIGN II. (3) Prerequisite: EAD 421. Synthesis of machines and mechanical systems. Analysis, creative design and selection of machines and machine elements.

EAD 431. ELECTRONICS. (3) Prerequisite: EAD 332. A study of electronic and semiconductor devices: transistor and vacuum tube power devices, audio and radio frequency amplifiers, tunnel diode amplifiers, high frequency amplifiers, feedback analysis of vacuum tube and transistor circuits, modulation and demodulation theory and related circuitry. Generalized oscillatory analysis.

EAD 432. COMPUTER ELECTRONICS. (3) Prerequisite: EAD 431. A study of logic and gate circuits, wave-shaping circuits, switching circuits, multivibrators, pulse circuits.

EAD 433. COMMUNICATION THEORY I. (3) Prerequisite: EAD 312. A study of information transmission and modulation systems. Transmission through electrical networks, analysis and comparison of modulation systems; sampling and noise.

EAD 441. ELECTRIC POWER SYSTEM ANALYSIS I. (3) Prerequisite: EAD 312 and ESM 321. A study of polyphase networks, power transmission lines and power network representations. System representations, network equations and solutions. Application of digital computer to power system analysis.

EAD 442. ELECTRIC POWER SYSTEM ANALYSIS II. (3) Prerequisite: EAD 441. A study of symmetrical components and their applications. Symmetrical and unsymmetrical fault and load consideratons. Load flow problems and numerical methods. Economic operation and stability studies.

EAD 443. ELECTRIC MACHINERY. (3) Prerequisite: EAD 312. Direct-current machines, induction machine. Machines in control systems. Synchronous machines. Fractional horsepower motors.

EAD 451. LABORATORY IV. (1) Corequisite: EAD 411, and prerequisite: EAD 352. A continuation of EAD 352.

EAD 452. PROJECTS LABORATORY. (2) Corequisite: EAD 412 or EAD 415. A project oriented laboratory course designed to provide the student an opportunity to apply his undergraduate engineering education to practical real world problems.

DEPARTMENT OF ENGINEERING SCIENCE, MECHANICS AND MATERIALS

Acting Chairman: Associate Professor Kim
Professor: Houghton
Associate Professor: Mohanty
Assistant Professors: Coleman, Crippen
Lecturer: (part-time) Gibbon

The engineering sciences are identified as those areas of engineering which emphasize the application of the fundamental principles of the physical sciences, primarily chemistry and physics, to engineering problems. Some classical engineering areas recognized to fall within this field include the thermal sciences, heat transfer, engineering mechanics, engineering materials, electric and magnetic fields and physical electronics.

Using the flexibility provided by the BSE Major Option-Minor Option provisions and with careful planning with his engineering career counselor, a student can develop a variety of educational programs which would provide the background for professional engineering licensing and practice in any of the areas included within the general field of engineering science or in one of its specialized areas. He can also develop an individualized study program in one of the newly emerging interdisciplinary fields involving the merger of engineering and the various science areas, such a biomechanics and biomaterials.

In addition to providing preparation for graduate work or engineering practice in any of the various fields of engineering science, the breadth of topics included within the engineering science courses provides a unique opportunity for the person interested in an exceptionally broad engineering education.

The professional option in Engineering Science, Mechanics and Materials is accredited by the Engineers' Council for Professional Development.

The departmental requirements for the Bachelor of Science in Engineering Degree with a major in Engineering Science, Mechanics and Materials are as follows:

Mathematics Course, 300 level or above	3
Science Elective	3
EAD 211, 212-Linear Networks and Analysis	6
ESM 252-ESM Lab I	1
ESM 312 - Thermodynamics II	3
ESM 321 - EM Fields	3
ESM 322 - EM Waves	3
ESM 341 - Introduction to Solid Mechanics	3
ESM 342 - Introduction to Fluid Mechanics	3
ESM 351 - ESM Lab II	1
ESM 352 - ESM Lab III	1
ESM 361 - Introduction to Engineering Materials	3
ESM 402-Introduction to Continua	3

ESM 451-ESM Projects Lab I	1
ESM 452-ESM Projects Lab II	2
One additional 400 level ESM course	3
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For students in the Professional Option, the minor option and the 400-level ESM elective must contain the equivalent of six hours of content in engineering design, synthesis, systems and/or integration of basic material from the several areas of ESM. The science elective will normally be chosen from chemistry courses, 200-level or above, or physics beyond 222. If it is consistent with his study plan, a student may be allowed to choose the science elective from an area other than physics or chemistry.

CURRICULUM OUTLINE
FOR THE
BACHELOR OF SCIENCE IN ENGINEERING
ENGINEERING SCIENCE, MECHANICS AND MATERIALS

FRESHMAN YEAR

Physics 101	4	Physics 102	4
Engineering 101 A	1	Engineering 102 A	1
Engineering 101 B	1	Engineering 102 B	1
Engineering 101 C	1	Engineering 102 C	1
Mathematics 141	4	Mathematics 105	1
English 101	3	Mathematics 142	4
	14	Humanities or S.S.	3
			15

SOPHOMORE YEAR

ESM 241	3	ESM 242	3
EAD 211	3	EAD 212	3
Mathematics 241	3	Mathematics 271	3
Chemistry 101	3	Physics 222	3
Chemistry 105	1	ESM 252	1
Economics 201 or 202	3	Humanities or S.S.	3
	16		16

JUNIOR YEAR

ESM 311	3	ESM 312	3
ESM 321	3	ESM 322	3
ESM 341	3	ESM 342	3
ESM 351	1	ESM 352	1
ESM 361	3	Minor (a)	3
Humanities or S.S.	3	Humanities or S.S.	3
	16		16

SENIOR YEAR

ESM 4xx (b)	3	ESM 402	3
ESM 451	1	ESM 452	2
Minor (a)	3	Minor (a)	3
Minor (a)	3	Minor (a)	3
Mathematics 3xx (c)	3	Science Elective (d)	3
Science Elective	3	Humanities or S.S.	3
	16		17

(a) Minor Option
In addition to the general uses of the Minor Option outlined on page 98, the ESM student could use this elective block to (1) obtain some depth within the broad area of engineering science by choosing a single advanced course from each of five engineering science fields; (2) obtain significant depth with a particular engineering science field through the use of available ESM, science, mathematics and engineering courses; (3) obtain a minor specialization in some other engineering or technical department; or (4) prepare for graduate work in engineering science, one of its specialized fields or some other engineering area by judicious elective selections within one of the three options above.

(b) A senior level ESM source elected to complement the student's overall educational objectives.

(c) An advanced applied mathematics course approved by the adviser.

(d) An approved course from the physical, life or earth sciences which complements the overall educational plan.

COURSE DESCRIPTIONS

ENGINEERING SCIENCE, MECHANICS AND MATERIALS

ESM 241. ENGINEERING MECHANICS I. (3) Prerequisite or corequisite: Math 142. The first course of a two-semester sequence introducing the principles of particle and rigid body mechanics, with engineering applications. Force systems and resultants. The equilibrium of particles and rigid bodies. Friction. The kinematics and kinetics of particles. Work-energy and impulse-momentum principles and conservation laws.

ESM 242. ENGINEERING MECHANICS II. (3) Prerequisite: ESM 241. Prerequisite or corequisite: Math 241. Properties of areas and volumes. The inertia tensor. Introduction to the dynamics of systems of particles and of rigid bodies. Energy and momentum methods. Euler's equations. Plane motion of rigid bodies.

ESM 252. ESM LABORATORY I. (1) Prerequisite: EAD 211. The first of a series of laboratories designed to instruct the student in the use of laboratory equipment and to develop and apply the principles of experimentation and measurement. Three laboratory hours per week.

ESM 311. THERMODYNAMICS I. (3) Prerequisites: ESM 241 or Physics 221 and Math 271. First and second laws of thermodynamics. Work and heat. Thermodynamic probability and entropy. Ideal and real gases. Nonreactive mixture of gases. Availability and irreversibility.

ESM 312. THERMODYNAMICS II. (3) Prerequisite: ESM 311. General thermodynamic relations; equations of state and generalized charts. Combustion, dissociation and chemical equilibrium. Introduction to statistical thermodynamics.

ESM 321. INTRODUCTION TO ELECTROMAGNETIC FIELDS. (3) Prerequisite: EAD 211. A study of electric and magnetic fields using the vector formulation. Vector analysis. Electrostatics: potential functions, dielectrics, capacitance, energy and forces associated with electric fields, solution of Laplace's and Poisson's equations. Magnetostatics: vector potential functions, Lorentz forces, hysteresis, magnetic polarization and induction, and energy. Gauss's, Ampere's, Faraday's laws, etc., leading to the Maxwell equations.

ESM 322. ELECTROMAGNETIC WAVES. (3) Prerequisite: ESM 321. A study of Maxwell's equations, transmission line theory, plane waves in media, propagation of electromagnetic waves in various media. The phenomena of reflection and refraction at interfaces of two dissimilar materials. Guided electromagnetic waves in coaxial cables and waveguides.

ESM 341. INTRODUCTION TO SOLID MECHANICS. (3) Prerequisite or corequisite: ESM 242, or prerequisite: ESM 241 and Math 241. An introduction to the technical theory of deformable solids and its applications. Stress and deformation resulting from axial loads and from torsion. Bending and shearing stresses in beams; beam deflection. Shear and bending moment diagrams; Mohr's circle for stress. Inelastic behavior is considered, as are time and temperature effects.

ESM 342. INTRODUCTION TO FLUID MECHANICS. (3) Prerequisite: ESM 241 and Math 241. A first course in fluid mechanics introducing the basic concepts of a fluid and the fundamentals of ideal and actual fluid flow. Topics covered include fluid statics, conservation principles, Bernoulli's equation, fluid flow in pipes, and measurement devices.

ESM 351. ESM LABORATORY II. (1) Prerequisite: junior standing in ESM. Laboratory experiments and development of basic experimental techniques necessary in the areas of engineering science, mechanics and materials. Three laboratory hours per week.

ESM 352. ESM LABORATORY III. (1) Prerequisite: ESM 351. Basic electronic principles, signal measuring, generating and recording devices; static and dynamic measurements; calibration of measuring devices. Three laboratory hours per week.

ESM 361. INTRODUCTION TO ENGINEERING MATERIALS. (3) Prerequisites: Chemistry 101 and Math 142. Types and classifications of materials. Atomic, molecular and crystal structure with particular

interest on the structures of metals, ceramics and polymers. Phase diagrams, equilibrium and an introduction to phase transformations.

ESM 362. MECHANICAL BEHAVIOR AND STRENGTHENING OF SOLIDS. (3) Prerequisite: Chemistry 101, prerequisite or corequisite: ESM 341. Mechanical properties of materials including elastic behavior, plastic flow, fracture, creep, fatigue, elevated temperature effects. Correlation of properties with atomic and microscopic structure. Dislocation theory and its application to mechanical behavior and strengthening mechanisms. Alloy hardening effects; effects of processing and heat treatments. Applications in Fe-C alloys.

ESM 402. INTRODUCTION TO CONTINUA. (1) Prerequisites: ESM 341, 342. Prerequisite or corequisite: ESM 322. A unified treatment of those topics which are common to all continua. Stress, deformation and velocity fields, constitutive equations, and field equations. Representative applications in solid, fluid and electromagnetic continua, including interaction problems.

ESM 411. HEAT TRANSFER. (3) Prerequisites: ESM 311 and 342. Steady and unsteady state heat conduction, forced and natural heat convection principles, radiative heat transfer, heat exchangers.

ESM 412. ENERGY CONVERSION I. (3) Prerequisite or corequisite: ESM 411. Application of principles of thermodynamics, fluid flow and heat transfer to conventional energy conversion devices, such as compressors, turbines and heat exchangers.

ESM 413. ENERGY CONVERSION II. (3) Prerequisite: ESM 311. Study of conversion of heat into power. Thermoelectric, magnetohydrodynamic engines, thermionic converters, solar and fuel cells.

ESM 414. DYNAMICS AND THERMODYNAMICS OF COMPRESSIBLE FLOW. (3) Prerequisites: ESM 311 and 342. Compressible flow equations, isentropic flow, normal shock waves. Fanno and Raleigh line flows. Nonsteady one dimensional flow.

ESM 422. ANTENNAS. (3) Prerequisite: ESM 322. A study of radiation into free space, the point source, thin linear antenna, arrays of linear elements, aperture antennas, impedance, methods of feeding, matching and termination. A survey of various antenna systems.

ESM 426. ACOUSTICS. (3) Prerequisite or corequisite: ESM 322 or Physics 331. Vibrations and simple vibrating systems; radiating systems; plane waves of sound; dynamic analogies, microphones and other acoustic transducers; acoustic measurements.

ESM 431. PHYSICAL ELECTRONICS. (3) Prerequisite: ESM 322 or Physics 331. Dynamics of charged particles in static fields; electron motion in electromagnetic fields; types of electron emission; beam focusing; longitudinal and transverse beam waves; microwave generation; plasma parameters.

ESM 432. QUANTUM AND PARAMETRIC ELECTRONICS. (3) Prerequisites: ESM 322 or Physics 331. Introduction to the concepts of quantum mechanics; spin energy levels; elementary masers, optical resonance; traveling wave tubes; backward wave oscillators.

ESM 434. SOLID STATE ELECTRONICS. (3) Prerequisite: ESM 361 or Physics 241. Band structure of solids. Electric analog for an array of atoms. Electron transport mechanisms in conduction, diffusion, tunneling. Electronic models of varactors, tunnel diodes and solid state microwave devices.

ESM 441. INTERMEDIATE SOLID MECHANICS. (3) Prerequisite: ESM 341. More advanced treatment of the topics covered in ESM 341. Included are statically indeterminate problems, energy methods, plane stress—plane strain analysis, buckling of columns and strain rosette analysis.

ESM 442. INTERMEDIATE FLUID MECHANICS. (3) Prerequisites: ESM 311 and 342. A continuation of ESM 342. Topics covered include boundary layers, flow over body surfaces, compressible flow, turbomachinery and propulsion devices.

ESM 443. EXPERIMENTAL STRESS ANALYSIS. (3) Prerequisite: ESM 341. Theoretical and experimental techniques of stress and strain analysis, with experimental emphasis on electrical gages and instrumentation; brittle coatings and photoelasticity.

ESM 444. INTERMEDIATE DYNAMICS. (3) Prerequisite: ESM 242 and Math 271. Further studies in the dynamics of particles and rigid bodies, with engineering applications. An introduction to Lagrange's equations of motion. Multi-degree-of-freedom vibrations.

ESM 451. ESM PROJECTS LABORATORY I. (1) Prerequisite: senior standing in ESM. The first of a two-semester sequence leading to a major laboratory project or design project involving integration of the various areas of the engineering sciences within the student's particular area of specialization. Three laboratory hours per week.

ESM 452. ESM PROJECTS LABORATORY II. (2) Prerequisite: ESM 451. Continuation of ESM 451. Six laboratory hours per week.

ESM 461. SOLID STATE TRANSFORMATIONS. (3) Prerequisite: ESM 361. Thermodynamics, morphology and kinetics of solid state transformations. Diffusion and absolute reaction rate theory; crystallographic nature of phase transformations; nucleation and growth processes; precipitation; oxidation and scaling reactions.

ESM 462. MATERIALS PRODUCTION AND PROCESSES. (3) Prerequisite or corequisite: ESM 361. Applications of thermodynamics and chemistry to extractive and process metallurgy. Fundamental principles of materials forming operations. Casting, mechanical working and joining methods.

DEPARTMENT OF URBAN AND ENVIRONMENTAL ENGINEERING

Chairman: Celanese Professor of Civil Engineering Bell
Associate Professor: Evett
Assistant Professors: Bayer, Pinckney
Lecturers (part-time): Browning, Sills

One of the major thrusts of the University of North Carolina at Charlotte is the establishment of ways in which urban problems can be identified and solutions found. The College of Engineering has in turn initiated a program in which urban and environmental aspects of engineering are emphasized. Traditionally many of these concerns have been treated within civil engineering, and all of the civil engineering courses at UNCC have been continued within the new Department of Urban and Environmental Engineering. In the curriculum, urban and environmental issues are the bases used for example problems, for student exercises and for independent study projects. In this department, the candidate for the degree of Bachelor of Science in Engineering will take a curriculum that prepares him to become a professional civil engineer upon completion of legal requirements as specified by the individual states.

The urban and non-urban problems of the environment can neither be distinctly separated, nor dealt with independently. The traditional functions of civil engineers to provide buildings and bridges, dams, harbors and canals, railroads and other facilities must be continued, while, at the same time, the urgent problems of the environment are assessed and solved. Thus, the department will emphasize urban problem areas associated with structural engineering, transportation engineering and environmental engineering. For example, more emphasis will be given to metropolitan traffic, while concern is continued in the area of interstate highways, and more emphasis will be given to water pollution problems while continuing the study of water resource systems and the building of water delivery systems for an increasing population.

Some students will wish to plan early in their undergraduate careers for continuation of their engineering studies beyond the first degree. The large number of fields of graduate study which can logically follow the curriculum offered by the Department of Urban and Environmental Engineering prevent detailed description of how each student should plan his program of study. The Minor Option sequence allows flexibility for such "Field" concentration, and each student will design his Minor Option program with his career counselor to achieve his individual goal.

The professional option in Urban and Environmental Engineering is accredited by the Engineers' Council for Professional Development.

The 42 hours of departmental requirements for UEE are:

CHE 106 - Principles of Chemistry Laboratory	1
EAD 258-Basic Electrical Engineering Laboratory	1
EAD 268-Basic Electrical Engineering	3

ESM 341 - Mechanical Behavior of Solids	3
ESM 342 - Fluid Mechanics	3
UEE 261 - Surveying	3
UEE 321 - Structural Analysis	3
UEE 341 - Environmental Engineering I	3
UEE 355 - Laboratory I	1
UEE 356 - Laboratory II	1
UEE 361 - Transportation Engineering I	3
UEE 421 - Structural Steel Design I	3
UEE 425-Reinforced Concrete Design I	3
UEE 455-Laboratory III	1
UEE 456 - Laboratory IV	1
UEE 468 - Geotechnical Engineering	3
UEE 471 - UEE Systems and Design I	3
UEE 472 - UEE Systems and Design II	3
	42

The professional curriculum emphasizes selection of engineering, scientific or mathematics in the five Minor Option courses. Those who instead take these options in the social and behavioral sciences receive a degree having the liberal option curriculum.

CURRICULUM OUTLINE

FOR THE

BACHELOR OF SCIENCE IN ENGINEERING

URBAN AND ENVIRONMENTAL ENGINEERING

The suggested order for taking courses is:

FRESHMAN YEAR

Physics 101	4	Physics 102	4
Engineering 101A	1	Engineering 102A	1
Engineering 101B	1	Engineering 102B	1
Engineering 101C	1	Engineering 102C	1
English 101	3	Mathematics 141	4
Humanities or S.S.	3	Mathematics 105	1
	13	Humanities or S.S.	3
			15

SOPHOMORE YEAR

Mathematics 142	4	Mathematics 241	3
Chemistry 101	3	Chemistry 102	3
Chemistry 105	1	Chemistry 106	1
Economics 201 or 202	3	ESM 241	3
UEE 261	3	EAD 258	1
Humanities or S.S.	3	EAD 268	3
	17	Humanities or S.S.	3
			17

JUNIOR YEAR

Mathematics 271	3	ESM 242	3
ESM 341	3	ESM 342	3
UEE 321	3	Physics 222	3
UEE 341	3	UEE 356	1
UEE 355	1	Minor	3
UEE 361	3	Minor	3
	16		16

SENIOR YEAR

ESM 311	3	UEE 456	1
UEE 421	3	UEE 468	3
UEE 425	3	UEE 472	3
UEE 455	1	Minor	3
UEE 471	3	Minor	3
Humanities or S.S.	3	Minor	3
	16		16

COURSE DESCRIPTIONS

URBAN AND ENVIRONMENTAL ENGINEERING

Structural Engineering

UEE 321. STRUCTURAL ANALYSIS. (3) Prerequisite: ESM 241. Analysis of statically determinate and indeterminate beams, trusses and frames under fixed and moving loads to include shear and moment diagrams, rough deflected shapes and deflections. Influence lines and criteria for moving loads. Indeterminate analyses to include methods of slope deflection, moment area, moment distribution and conjugate beams.

UEE 421. STRUCTURAL STEEL DESIGN I. (3) Prerequisites: UEE 321 and ESM 341. Analysis and design of structural steel components with emphasis on the fundamental theories necessary for a thorough understanding of the design procedure. Individual members are considered, including pure tension, pure compression, uniaxial and biaxial bending and combined bending and axial stresses. Current AISC Specifications used.

UEE 422. STRUCTURAL STEEL DESIGN II. (3) Prerequisite: UEE 421. Analysis and design of structural steel systems with emphasis on the fundamental theories necessary for a thorough understanding of the design of complete structures. Welded, riveted and bolted connections. Design of steel buildings, composite design, built-up beams and plate girders. Plastic analysis and design. Emphasis to be placed on various topics partially dependent upon student interest and goals. Current AISC Specifications used.

UEE 424. ADVANCED STRUCTURAL ANALYSIS. (3) Prerequisites: UEE 321. A continuation of UEE 321. Fundamental and special methods of analysis of statically determinate and indeterminate structures. Topics include deflection theory, energy theory, variable cross-section analysis, multistory moment distribution.

UEE 425. REINFORCED CONCRETE DESIGN I. (3) Prerequisites: UEE 321 and ESM 341. Analysis and design of reinforced concrete components with emphasis on fundamental theories. Mechanics and behavior of reinforced concrete. Flexural members to include singly and doubly reinforced beams of various cross sections (rectangular, T-beams, joists, one-way slabs and others). Shear in beams and columns. Short columns to include uniaxial and biaxial bending. Construction of short column interaction diagrams. Introduction to footings. Current ACI Specifications used.

UEE 426. REINFORCED CONCRETE DESIGN II. (3) Prerequisite: UEE 425. Analysis and design of reinforced concrete components and systems with emphasis on the fundamental theories necessary for a thorough understanding of concrete structures. Concentrically loaded slender columns, slender columns under compression plus bending. Footings and retaining walls. Continuous beams and frames. Buildings and bridges. Precast and prestressed concrete. Emphasis to be placed on various topics partially dependent upon student interest and goals. Current ACI Specifications used.

UEE 428. MATRIX METHODS OF STRUCTURAL ANALYSIS. (3) Prerequisites: UEE 321 or consent of instructor. Flexibility method of analysis for planar structures. Stiffness method of analysis for planar orthogonal, planar non-orthogonal and three-dimensional structures with emphasis on computer applications.

UEE 455. LABORATORY III. (1) Prerequisites or corequisites: UEE 421 and UEE 425. Design of concrete mixes; testing of standard concrete cylinders, beams and columns. Testings of steel tensile members and beams. Analysis and design of simple structural systems. Three laboratory hours per week.

Environmental and Water Resources Engineering

UEE 341. ENVIRONMENTAL ENGINEERING I. (3) Admission by consent of instructor. Theory of supply, transmission and distribution of water: collection of waste-water; water quality; theory and design of water and waste-water treatment processes.

UEE 342. ENVIRONMENTAL ENGINEERING II. (3) Prerequisite: UEE 341. A continuation of UEE 341. Industrial wastes; stream and reservoir pollution abatement; river basin and estuarine studies; solid waste disposal and ground water pollution; air pollution sources, dispersion, and deposition; environmental effects of radioactivity.

UEE 355. LABORATORY I. (1) Prerequisite or corequisite: UEE 341. Laboratory problems in environmental engineering. Emphasis on

analysis and presentation of results as well as on the significance of results as they affect theory and/or practice. Three laboratory hours per week.

UEE 444. ENGINEERING HYDROLOGY. (3) Admission by consent of instructor. A quantitative study of the various components of the water cycle, including precipitation, runoff, ground water flow, evaporation and transpiration, stream flow. Hydrograph analysis; flood routing; frequency and duration; reservoir design.

UEE 446. ENGINEERING HYDRAULICS. (3) Prerequisite: ESM 342. Problems of fluids as applied in civil engineering; open channel flow; dams and spillways; water power; river flow and backwater curves; pipe networks, fire flow, sewage collection, groundwater; computer applications pertaining thereto.

Transportation and Geotechnical Engineering

UEE 261. SURVEYING. (3) Admission by consent of instructor. Elements of plane surveying including taping, transit, level, stadia, plane table, topographic surveying and mapping, care and adjustment of instruments; error adjustments; area and earthwork computations; introduction to photogrammetry; computer techniques. Periods of laboratory, lecture and field work will be scheduled.

UEE 365. LABORATORY II. (1) Prerequisite: UEE 361. Design of basic highway configurations involving route layout, geometric design and earthwork operations. Three laboratory hours per week.

UEE 361. TRANSPORTATION ENGINEERING I. (3) Admission by consent of instructor. Development of transportation facilities; planning, location and economic considerations, with special emphasis on land transportation and computer applications pertaining thereto.

UEE 362. TRANSPORTATION ENGINEERING II. (3) Prerequisite: UEE 361. Urban transportation considerations: travel characteristics; characteristics of urban transportation systems; analysis of transportation-oriented studies; analytic methods of traffic distribution and assignment; urban layout and growth patterns.

UEE 456. LABORATORY IV. (1) Prerequisites or corequisites: ESM 341 and UEE 468. Demonstrations and experiments verifying theoretical bases of geotechnical engineering; cohesionless and cohesive soils. Three laboratory hours per week.

UEE 464. TRAFFIC ENGINEERING. (3) Prerequisite: UEE 361. Characteristics of vehicles and vehicle operators; investigative studies in traffic engineering; planning and implementation of traffic control devices; design of parking facilites; implications of traffic engineering decisions.

UEE 468. GEOTECHNICAL ENGINEERING. (3) Prerequisite: ESM 341. Theoretical bases of geotechnical engineering to include shear,

stress and strain in soils and failure of soils; foundations; permeability and pore pressure; retaining structures, slope stability and earth dams; soil-structure interaction; soil dynamics; liquefaction; earthquake effects.

Urban Engineering, Design Engineering and Special Topics

UEE 412. COMPUTER APPLICATIONS IN URBAN AND ENVIRONMENTAL ENGINEERING. (3) Senior standing in engineering. The application of the digital computer to various types of urban and environmental engineering problems. Examination in depth of selected urban and environmental engineering problems.

UEE 432. URBAN ENGINEERING. (3) Admission by consent of instructor. An examination of those societal problems of metropolitan regions most amenable to engineering solutions. Current urban literature will be reviewed in seminar, and selected topics amenable to engineering analysis will be studied. Written reports will be presented.

UEE 471. UEE SYSTEMS AND DESIGN I. (3) Admission by consent of instructor. Introduction to systems engineering as applied to urban and environmental engineering problems. Organization of "consulting engineering companies" for preliminary planning, information gathering and data analysis on a specific urban and environmental engineering problem area chosen for each class. Assignment and scheduling of tasks resulting in contracts to be completed in UEE 472.

UEE 472. UEE SYSTEMS AND DESIGN II. (3) Admission by consent of instructor. Completion of "consulting engineering company contracts" established in UEE 471, resulting in a comprehensive written report and verbal presentation to the College of Engineering faculty and practicing engineers.

UEE 490. SPECIAL TOPICS IN UEE. (Variable credit 1-4 hours. May be repeated for credit.) Prerequisite: senior standing in UEE. This course will be devoted to specific new areas which are emerging in the various fields of urban and environmental engineering. Given at the senior level, the course will build upon and synthesize the knowledge the students have gained from the engineering science, mathematics and physical sciences stems of the core curriculum.

UEE 491. UNDERGRADUATE RESEARCH IN UEE. (Variable credit 1-4 hours. May be repeated for credit.) Prerequisite: consent of department. This course involves the independent study of a theoretical and/or experimental problem in a specialized area of UEE. The student can pursue some particular area or problem to a depth much greater than can be undertaken within the scope of existing courses. The topics of the investigation may originate from the student or from the faculty member who will supervise the study.

DEPARTMENT OF ENGINEERING TECHNOLOGY

Chairman: Associate Professor Phelps
Associate Professor: Grant
Assistant Professors: Brown, Christie, Elliot, Liu, Mobley, Priebe, Priory
Lecturers (part-time): Hayes, Petty, Sanders, Wilkinson, Chatterjea

Engineering and technical education have undergone considerable change in the last 25 years. The complexities of space exploration, nuclear power, communications systems, environmental control, information processing and transportation systems have demanded a great increase in the involvement of professional engineers in theoretical and analytical work. This has resulted in a much greater emphasis upon research and development, science and mathematics, in professional engineering curricula.

At the same time, after the more complex devices and systems have been engineered, their design, development and operation require the sophisticated knowledge and skills of practitioners of what might be called the "applied engineering sciences." Programs dedicated to fulfilling this urgent need are now developing rapidly over the United States. The aim and content of these programs are distinctly different from professional engineering curricula.

To provide the appropriate distinction from both the theoretical-professional engineers and from the engineering technicians who are graduated from the two-year technical institutes, the designation "engineering technologist" is being used throughout the United States for the graduates of four-year applied engineering or engineering technology curricula.

The two-year technical institute programs in North Carolina and in many other states provide excellent foundations for engineering technology curricula. Therefore, the engineering technology program at the University of North Carolina at Charlotte is limited to the junior and senior years, and an Associate in Applied Science degree is required for admission.

Each of the following Baccalaureate Engineering Technology curricula is accredited by the Engineers' Council for Professional Development:

Civil Engineering Technology
Computer/Electronic Engineering Technology
Mechanical Engineering Technology

The ECPD is recognized by the National Commission on Accrediting as the appropriate accrediting agency of engineering technology curricula.

Requirements for the Degree of Bachelor of Engineering Technology

Residence

The residence requirement for the Bachelor of Engineering Technology degree at the University of North Carolina at Charlotte specifies that the last 30 semester hours of credit must be earned at UNCC and that the last 12 semester hours of work in the major field must be earned at this University.

Scholastic

A minimum level of scholastic achievement is required of all students in order to continue as a degree candidate (see Requirements for Continued Enrollment on p. 103).

In order to be eligible for the B.E.T. degree, a minimum quality point average (QPA) of 2.00 on all courses attempted at UNCC is required. In addition, a minimum QPA of 2.00 on all courses attempted in the College of Engineering is required.

Course Requirements

Prerequisite courses for entering the Engineering Technology program, normally taken at a technical institute or junior college, are listed on page 128.

In addition, the following UNCC courses are required for the B.E.T. degree:

Title	*Sem. Hours*
Chemistry 101 (or other Natural Science)*	3
Computer Science (CSC) 100	3
Economics 201 or 202	3
Humanities or Social Science Electives	12
Free Electives	3
Major Electives	6
Engineering Analysis*	6
Specified courses in major area of study (see p. 129)	28
Total	—
Transfer credit for A.A.S. degree	64
Total no. of semester hours required for B.E.T. degree	128

*Differences exist for MET and CET curriculum.

Requirements for Admission

A student who has graduated from a technical institute or the technical division of a junior college and who wishes to enter the Engineering Technology program at UNCC must meet the following requirements:

1. Have an Associate in Applied Science or Associate in Engineering degree in a field appropriate to the option which he plans to enter.

2. Have an overall quality point average of at least 2.20 (based on the 4.0 system) on all courses taken at the technical institute (exceptions to this rule will be considered on the basis of individual merit), and

3. Have satisfactorily completed the prerequisite courses for the option which he plans to enter (see below).

There is considerable variance among the objectives and contents of technical institute programs throughout the United States. Should this result in entrance deficiencies, the student can usually remove these deficiencies at Central Piedmont Community College in Charlotte prior to admission to UNCC or during his first year at UNCC.

Background Courses Required for Entering the Bachelor of Engineering Technology Program

The student should have covered the following subject matter in his two-year associate degree program. Quarter-hours indicated are minima.

Descriptive Title	*Quarter-Hours*
English Composition, Technical Writing, and/or Public Speaking	9
Algebra, Trigonometry, and Analytic Geometry with Calculus	13
Differential and Integral Calculus*	5
General Physics (with Laboratory)	8
Physics or Chemistry (with Laboratory)*	4
Humanities or Social Sciences*	6
Non-technical subjects*	3
Technical Course in Major Area**	48
Total	96

**The 48 hours of major work should include courses covering all of the subjects in any one of the areas shown below:

Electrical	*Civil*	*Mechanical*
Drafting	Drafting	Drafting
D.C. Circuits	Surveying*	Machine Processes
A.C. Circuits	Statics	Statics
Electronic Instruments and Measurements	Strength of Materials	Machine Design or Design
Vacuum Tubes & Transistors	Properties of Concrete*	Drafting
Transistor Amplifiers and Circuits		Metallurgy*
Pulse Circuits		Strength of Materials
Communication Electronics or Control Systems		

*These courses can he taken at UNCC.

CURRICULUM REQUIREMENTS FOR THE BACHELOR OF ENGINEERING TECHNOLOGY DEGREE

CIVIL ENGINEERING TECHNOLOGY

An ECPD Accredited Baccalaureate
Engineering Technology Curriculum

JUNIOR YEAR

CET 311	3	CET 312	3
CET 321	3	CET 332	3
CET 351	1	CET 352	1
ET 370	3	ET 371	3
CSC 100	3	ECO 202 (or 201)	3
CHE 101 or E.S. 102*	4	Hum. or S.S. Electives (b)	3
	17		16

SENIOR YEAR

CET 411	3	CET 462	3
CET 441	3	Major Elective (c)	6
ET 473	3	Hum. or S.S. Elective (b)	3
Major Elective (c)	1	Free Elective (d)	3
Hum. or S.S. Elective (b)	3		15
Hum. or S.S. Elective (b)	3		
	16		

*It is recommended that students who are primarily interested in environmental technology take Chemistry 101 and 105 and those who are primarily interested in construction take Earth Science 102.

ELECTRICAL ENGINEERING TECHNOLOGY

COMPUTER/ELECTRONICS ENGINEERING TECHNOLOGY OPTION

An ECPD Accredited Baccalaureate
Engineering Technology Curriculum

JUNIOR YEAR

EET 351	1	EET 311	3
EET 381	3	EET 312	3
ET 371	3	EET 382	3
CSC 100	3	ET 471	3
CHE 101	3	ECO 202 (or 201)	3
Hum. or S.S. Elective (b)	3	EET 352	1
	16		16

SENIOR YEAR

EET 481	3	EET 412	3
EET 452	1	EET 451	1
EET 411	3	Hum. or S.S. Elective (b)	6
Major Elective (c)	3	Major Elective (c)	3
Hum. or S.S. Elective (b)	3	Free Elective (d)	3
CSC 201	3		16
	16		

MECHANICAL ENGINEERING TECHNOLOGY

An ECPD Accredited Baccalaureate
Engineering Technology Curriculum

JUNIOR YEAR

MET 311	3	MET 312	3
MET 331	3	MET 322	3
MET 351	1	MET 352	1
ET 371	3	ET 471	3
CSC 100	3	ECO 202 (or 201)	3
CHE 101 (a)	3	Hum. or S.S. Elective (b)	3
	16		16

SENIOR YEAR

MET 411	3	MET 452	1
MET 341	3	MET 453	1
Major Elective (c)	3	MET 462	3
Hum. or S.S. Elective (b)	3	MET 472	3
Hum. and S.S. Elective (b)	3	Major Elective (c)	3
	15	Free Elective (d)	3
			17

Notes

(a) A student who has previously taken a college-level course in general chemistry shall substitute for this requirement another course in chemistry, physics, biology, or Earth Science 101 or 102, Earth Science 341 or Earth Science 344.*

(b) Humanity and social science electives must be selected from a current list of approved courses which is maintained in the departmental office and shall include a minimum of one 200 and one 300-level course. A coherent plan of study covering all elective courses must be submitted by the student and approved by his counselor before the student enrolls in his first course.

(c) Major electives must be 300 or 400-level courses related to the student's field of specialization or in business administration.

(d) Free electives are intended to provide the student an opportunity (1) to investigate other areas of interest outside the College of Engineering, (2) to support an upper-division sequence in the humanities or social science or (3) to study a foreign language. Courses selected as free electives should normally be 200-level or higher and must be approved by the student's counselor after the student has outlined the sequence of electives that he plans to pursue. No course may be taken for elective credit that covers material for which the student has received credit in another course. A maximum of three semester hours credit is allowed for physical education.

**Students who have previously taken*	*Should take at UNCC*
3 quarters of physics and no chemistry	Chemistry 101
2 quarters of physics and 1 quarter of chemistry	Physics 101 or 102
3 quarters of physics and at least 1 qtr. of Chem. (4 q. hrs.)	Earth Science 101, Earth Science 102, Biology 101 or Physics 103

COURSE DESCRIPTIONS

Engineering Technology

An Engineering Technology course may be used for elective or minor credit by a student in another major only with the prior approval of the student's major department and the Department of Engineering Technology.

ET 370. BASIC ENGINEERING ANALYSIS. (3) Prerequisite: college algebra, trigonometry and analytic geometry. A course designed to give students intensive practice in the methods of solving engineering problems which require a knowledge of algebra, determinants, trigonometry and analytic geometry.

ET 371. ENGINEERING ANALYSIS I. (3) Prerequisite: differential and integral calculus and ET 370. Methods of solving engineering problems which involve the differentiation and integration of algebraic, trigonometric and logarithmic functions; use of integral tables.

ET 471. ENGINEERING ANALYSIS II. (3) Prerequisite: ET 371. A study of constant coefficient linear differential equations, including non-homogeneous equations; Laplace transforms and the use of Laplace transform table; applications to the analysis of dynamic systems.

ET 473. ENGINEERING ANALYSIS III. (3) Prerequisite: CSC 100 and ET 371. An introduction to elementary numerical methods which are useful in the solution of engineering problems on the digital computer. Emphasis is placed on applications to Civil Engineering Technology.

ET 481. COMPUTER GRAPHICS TECHNOLOGY. (3) A study of the use of computer graphics as a design drafting tool. The course will utilize computer driven plotters and digitizer to prepare engineering drawings and illustrations.

ET 482. PROJECT MANAGEMENT TECHNOLOGY. (3) Use of CPM and PERT network analysis for planning, managing and controlling projects.

ET 490. SPECIAL TOPICS IN ENGINEERING TECHNOLOGY. (Variable credit, 1-4 hours. May be repeated for credit.) Prerequisite: senior standing in Engineering Technology or consent of the department. This course will be devoted to specific new areas which are emerging in the various fields of Engineering Technology. Given at the senior level, the course will build upon and synthesize the knowledge the students have gained from their Engineering Technology curriculum.

Civil Engineering Technology

CET 311. STRUCTURAL ANALYSIS I. (3) Prerequisite: elementary courses in statics and strength of materials. Prerequisite or corequisite: ET 370. An introduction to the basic concepts and principles of structural analysis relating to beams, trusses and frame structures. Analysis of statically determinate structures under fixed and moving loads; influence lines for moving loads. Deflection of structures. Emphasis on practical aspects of structural analysis.

CET 312. STRUCTURAL ANALYSIS II. (3) Prerequisite: CET 311. Analysis of statically indeterminate structures using the method of three-moments, method of least work, method of slope deflection and the moment-distribution method. An introduction to matrix methods of structural analysis.

CET 321. FOUNDATIONS AND EARTHWORK. (3) Prerequisite or corequisite: ET 370. A study of the basic design and construction of foundations. The background theories are generally introduced in concise forms as formulas or charts. Emphasis on practical aspects of foundation design and earthwork construction.

CET 332. HYDRAULICS. (3) Prerequisite or corequisite: ET 370. A study of the fundamental principles of hydraulics and their applications in engineering practice, including the fundamentals of fluid flow through orifices, tubes, and pipes, in open channels and over weirs.

CET 351. SOIL TESTING LABORATORY. (1) Prerequisite or corequisite: CET 321. A laboratory designed to familiarize the student with the common laboratory soil tests and analysis procedures with emphasis on the significance of the various tests, the testing procedures, and the detailed computations.

CET 352. HYDRAULICS LABORATORY. (1) Prerequisite or corequisite: CET 332. Verification of some of the principles of hydraulics relating to fluid flow through orifices, tubes and pipes, in open channels and over weirs.

CET 411. REINFORCED CONCRETE DESIGN. (3) Prerequisite: CET 312. Design of rectangular beams, T-beams, columns, reinforced concrete floor systems and reinforced concrete footings, according to the ACI code.

CET 412. STRUCTURAL STEEL DESIGN. (3) Prerequisite: CET 312. Design of beams and columns, floor framing, tension and compression members, riveted and welded connections and plate girders according to AISC specifications.

CET 441. HIGHWAY DESIGN AND CONSTRUCTION. (3) An introduction to highway planning, economic considerations and traffic engineering. Design and construction of modern highways including grade separations and interchanges.

CET 442. PAVEMENT DESIGN. (3) Prerequisite: CET 441. A study of stresses in flexible and rigid pavements and properties of pavement components. Design of rigid and flexible pavements. A discussion of performance and failures and of pavement strengthening.

CET 444. ASPHALT PAVEMENT MIXTURES. (3) A study of the chemical and physical properties of asphalts, classification and properties of mineral aggregates, significant properties of asphalt paving mixtures, design of hot-mix asphaltic concrete, asphalt pavement performance and reconstruction of old asphaltic pavements.

CET 451. PHOTOGRAMMETRY. (1) Prerequisite: course in elementary surveying and CSC 100. An outline of the fundamental principles of photogrammetry and photogrammetric procedures used in engineering practice. Students learn how to use modern photogrammetric equipment.

CET 452. ENVIRONMENTAL LABORATORY. (1) Prerequisite or corequisite: CET 462. A laboratory designed to familiarize the student with the analysis of water and sewage and with problems related to environmental control.

CET 462. INTRODUCTION TO ENVIRONMENTAL ENGINEERING. (3) Prerequisite: CET 332. The study of water supply, treatment and distribution and of liquid-waste disposal systems.

CET 464. INTRODUCTION TO URBAN ENGINEERING. (3) The study of city planning, including street layout and lighting and the design of water, sewerage, storm drain and solid-waste collection and disposal systems. Street maintenance and traffic analysis; air pollution control.

CET 466. INTRODUCTION TO AIR POLLUTION CONTROL TECHNOLOGY. (3) Prerequisite: consent of instructor. The study of the sources of air pollution, air quality and emission standards, monitoring of air quality and the control of air pollution.

CET 467. INTRODUCTORY PUBLIC HEALTH ENGINEERING TECHNOLOGY. (3) Consent of instructor. A study of the public health engineering in rural, urban and industrial centers with emphasis on water, housing, heating, cooling, ventilation, noise, milk, food, insects and rodents, monitoring and control.

CET 472. LAND SURVEYING. (3) Prerequisite: basic course in surveying. A study of the advanced principles and practice of land surveying. The study will prepare the student for the National Council of Engineering Examiners Land Surveyors Examination and the state examination for land surveyors.

ELECTRICAL ENGINEERING TECHNOLOGY

EET 311. ANALYSIS OF LINEAR NETWORKS. (3) Prerequisite or corequisite: ET 371. Review of complex numbers and phasor notation. Steady state analysis of electrical networks using Kirchoff's laws; applications of various network theorems; magnetically coupled circuits; three-phase circuits.

EET 312. SEMICONDUCTORS. (3) A study of the atomic structure and physical properties of semiconductor materials followed by a study of specific devices, such as junction diodes, thermistors, unijunctions, field-effect transistors and tunnel diodes. Applications of these devices in specific circuits.

EET 351. ELECTROMECHANICAL TECHNOLOGY LABORATORY. (1) Prerequisite or corequisite: EET 381. Experiments illustrating basic motor/generator characteristics, the principles of operation and applications of feed-back control systems and the design of relay combinational switching circuits. Emphasis is placed on the writing and preparation of technical reports. Three laboratory hours per week.

EET 352. SEMICONDUCTORS AND CIRCUITS TECHNOLOGY LABORATORY. (1) Prerequisites: EET 351, EET 381 and CSC 100. Prerequisite or corequisite: EET 311 and EET 312. Experiments illustrate (1) the characteristics of transistors and other semiconductor devices and methods of measuring various transistor parameters; (2) the

characteristics of several types of electrical networks, especially lead/lag networks, and also the determination of gain/phase characteristics (Bode plots) of amplifiers; and (3) the design of combinational switching networks and their implementation with discrete components. A final project/experiment requires the use of a teletype computer terminal to aid in the design of a combinational network, using the Quine-McCluskey method. Three laboratory hours per week.

EET 381. INTRODUCTION TO LOGICAL DESIGN. (3) Prerequisite or corequisite: CSC 100. An introduction to Boolean algebra. Disjunctive and conjunctive canonical forms. Applications to the analysis and design of combinational switching circuits utilizing both relays and semiconductors. Minimization of switching functions. Design of multiple-output networks.

EET 382. LOGICAL DESIGN OF SEQUENTIAL CIRCUITS. (3) Prerequisite: EET 381. The description and classification of sequential switching circuits; the operation of the principal types of flip-flops. The analysis and design of pulse-mode sequential circuits including state-table reduction procedures.

EET 411. TECHNOLOGY OF ACTIVE NETWORKS. (3) Prerequisites: EET 311, EET 312 and ET 371. A study of the black box approach to the analysis of amplifiers in general, junction transistors, small signal models, field effect transistors, feed back principles and applications, oscillators and pulse circuits.

EET 412. DIGITAL ELECTRONICS. (3) Prerequisites: EET 312 and EET 382. The analysis and design of pulse circuits using discrete components and the analysis of various forms of digital integrated circuits, including RTL, DTL, TTL, ECL and MOS logic. Other areas studied include the transmission of digital signals, power supply bussing and decoupling, crosstalk and system noise.

EET 451. COMPUTER TECHNOLOGY LABORATORY. (1) Prerequisites: EET 352 and ET 471. Prerequisite or corequisite: EET 411 and EET 481. Students learn to operate a digital computer using both the computer console and a teletype terminal for entering programs. Students operate an analog computer and use it to solve certain types of elementary differential equations. Experiments also illustrate the characteristics and applications of operational amplifiers, A/D converters and D/A converters. Three laboratory hours per week.

EET 452. INTEGRATED CIRCUITS AND DIGITAL ELECTRONICS TECHNOLOGY LABORATORY. (1) Prerequisite: EET 451. Prerequisite or corequisite: EET 412. Experiments illustrating the characteristics of various types of digital integrated circuits and the design and implementation of sequential switching networks using integrated circuits. Three laboratory hours per week.

EET 481. COMPUTER DESIGN. (3) Prerequisites: EET 382 and CSC 100. The function and operation of the various elements that comprise a digital computer; methods for performing arithmetic

operations; types and operation of memories; operation of I/O equipment; machine codes and communications with the computer.

EET 483. MODULATION AND TRANSMISSION. (3) Prerequisites: EET 311, EET 312 and ET 471. An introduction to Fourier series. Frequency analysis of signals; amplitude, phase, and pulse modulation methods.

EET 484. DESIGN OF REAL-TIME SYSTEMS. (3) Prerequisites: EET 481 and ET 371. A brief introduction to probability and queing theory. The methodology and considerations involved in designing large-scale, real-time data processing systems.

MECHANICAL ENGINEERING TECHNOLOGY

MET 311. KINEMATICS. (3) Prerequisite or corequisite: ET 371. The study of the relative motions of mechanisms or machines. Displacement velocity and acceleration relationships of elements of a mechanism as applied to mechanical power transmitting equipment.

MET 312. DYNAMICS. (3) The dynamic behavior of machine elements, translation and rotation of a rigid body, the principles of conservation of energy and momentum.

MET 322. STRENGTH OF MATERIALS. (3) Prerequisite or corequisite: ET 371. A course designed to extend the student's knowledge of basic strength of materials with emphasis on applications to engineering problems. Included are the stress-strain relationships resulting from direct loads, torsional loads and bending loads and, also, the results obtained from applying more than one of these loads simultaneously. Beam deflection and column loading.

MET 331. FLUID MECHANICS. (3) A study of the fundamental principles of fluid mechanics. Topics covered include manometry, buoyancy, forces on submerged bodies, Bernoulli's equation with applications, orifices, pipe losses and an introduction to hydrodynamics.

MET 341. THERMODYNAMICS. (3) Prerequisites: ET 371 and CHEM 101. The perfect gas law; the first and second laws of thermodynamics and their application to power and refrigeration cycles. Gases and mixtures of gases, especially air and water vapor. Introduction to heat transfer with applications.

MET 351. FLUID MECHANICS LABORATORY. (1) Prerequisite or corequisite: MET 331. Laboratory experiments relating to flow through conduits, the experimental determination of fluid properties and the behavior of fluids in static and dynamic equilibrium.

MET 352. STRESS ANALYSIS LABORATORY. (1) Prerequisite or corequisite: MET 322. Experiments illustrating stress-strain relationships in engineering materials and the use of brittle coating, photoelasticity and electrical-resistance strain gauges.

MET 411. MACHINE DESIGN I. (3) Prerequisites: MET 312 and MET 322. The first part of a two-semester course designed to apply previously acquired skills, along with newly attained ones, toward the design and analysis of machine components.

MET 412. MACHINE DESIGN II. (3) Prerequisite: MET 411. A continuation of MET 411 with emphasis on new methods of problem solving and opportunities to integrate previously attained skills and knowledge into the design and optimization of machine systems.

MET 452. INSTRUMENTATION LABORATORY. (1) Prerequisite or corequisite: MET 462. A laboratory designed to give students practice in the use of the various instrumentation devices studied in MET 462.

MET 462. INSTRUMENTATION. (3) Prerequisite or corequisite: ET 471. The nature of measurement and measuring systems; errors in measurements. A study of various types of measuring devices including both the sending elements such as thermo-couples, strain gages and displacement transducers and the indicating devices such as oscillosopes and recorders.

MET 472. INDUSTRIAL CONTROLS. (3) Prerequisite: ET 471. An introduction to the theory of closed-loop control systems with emphasis on servomechanisms; a study of various types of process control systems used in industry, including detailed treatment of numerical control systems.

College of Human Development and Learning

Dean: Professor Chase
Distinguished Professor: Powers
Professors: Britt, Dickey, Hackney
Associate Professors: Bransky, Burke, Mork, Pleasants, Roberts, Smith
Assistant Professors: Antonelli, Kochendofer, Lueder, Mankinen, Pasternak, Rippy, Rollins Romine, Rowland, Sadoff, Whaley
Instructors: Adkins, Armstrong, Bambach, Baptiste, Bird, Carter, Fuqua, Gaines, Gwaltney, Hammond, Hendrix, Holland, Irons, Lewis, Maher, Parker, Parrish, Robbins, Sapp

Human development and learning at the University of North Carolina at Charlotte is conceived as a cooperative enterprise of the entire faculty. The preparation of teachers is one of the important functions of this University.

Program design is directed toward the development of human potential. Emphasis is given to the development and analysis of experiences which liberate, freeing the capacity to learn; the teacher/learner relationship; factors of meaning, values, and self-concepts which cause behavior; experiences which provide opportunities for person-to-person relationships; and to experiences in various school-community settings which provide opportunities for the development of competencies necessary for self-analysis, value judgments, choices, evaluation and behavioral change.

The development of programs of study and activities of the College of Human Development and Learning as translated into person-to-person relationships, teacher/learner relationships, and services to the University and society in accord with the stated rationale, represents commitment to beliefs that professional experiences designed for teachers and other personnel for the helping professions should give priority to:

1. The cognitive and affective understanding of human potentialities and the release of human potential in relationship to the complex factors which relate to continuous growth and development of personhood;

2. The processes, programs and experiences which insure that the teacher and other personnel in the helping professions are liberally educated and possess some intellectual depth and competencies in selected teaching fields and related disciplines;

3. The identification of one's beliefs, prejudices, elements of relationships and behavior;

4. The analysis of teaching-learning and other helping relationships which identify values, meaning and the self-concept causing behavior.

5. The facilitation of moral judgment through the establishment of personhood as a fully-functioning self in a relationship ever mindful of man;

6. The expansion of the field of awareness to the end that a more nearly complete complex of multidimensional relationships may be established between the learner, his perceptions, his behavior, the structures of knowledge and the reification of theory into practice;

7. The facilitation of the integration of knowledge to promote the expansion of perception and the relationship of ideas to elements of the present, the future and the past;

8. The facilitation of experiences which provide involvement in the development of competencies necessary to self-analysis, value judgments and choices, evaluation and behavioral change through clinical learning and the use of multiforces in the solution of problems.

With commitment to the above beliefs, the professional sequence for undergraduate studies in the College of Human Development and Learning is presented as phases which may be conceptualized as an evolving continuous spiral, as a series of experiences, integrating Exploration, Involvement, Commitment and Universality. Therefore, all courses, seminars and clinical experiences are organized around these four phases.

Phase I: Explorations in Human Potential

The first phase of the integrated program of professional study focuses upon Man, his nature, potential and worth. Emphasis is given to life patterns, creative potential, social forces and human potential and to the image of man as becoming. During this phase, studies will focus upon the person in urban society, the facilitation of meaning and upon those factors and conditions which facilitate or hinder the growth of human potential. The student will mainly be concerned with an analysis of his beliefs, values and his personal relationships in relation to a growth environment. Opportunities are provided for the student to be engaged in clinical experiences that will promote understanding of the sociological, psychological and philosophical foundations on which educational experiences are selected and organized.

Phase II: Meaning and Growth in Teacher/Learner Relationships

Phase II in the integrated program of professional study seeks to extend and deepen the interest and understanding explored in phase I. During this phase, the student will consider particularly the special

problems attendant to the release of human potential through participation in a particular interpersonal relationship—that of teacher and learner.

Experiential learning is extremely "open." It calls for choices, selections, self-screening and involvement with self-analysis and team participation. In essence, experiential learning facilitates meaning and is the medium for a growth environment.

In the College of Human Development and Learning, the program of clinical experiences and internships has been designed so that the program of experiential learnings will begin just as early as the program of intellectual analysis and should proceed alongside it, step by step. At every step, the two should be correlated and fused for internalization. Experiences should move naturally into the next step of intellectualization and the next phase of experience.

Clinical Experiences and Internships

For too long problems such as that of translating theory into practice have existed within professional education. As an important part of the effort to change this situation, clinical experiences and internships have been made an integral part of all programs of study offered by the College of Human Development and Learning. These experiences are designed to give the student of human development and learning an opportunity to learn by doing, to relate theory to practice and to reality-test contemporary theories and innovations. Such experience thus becomes the center of, and testing ground for, a program of studies designed to meet needs and interests of the individual student.

Clinical experiences are begun in the first course in human development and learning through involvement in such capacities as teacher aide, tutor, playground assistant, library guide, counselor or administrative aide. In each successive course at the undergraduate level, this approach is continued as related appropriate firsthand experiences are designed to complement the student's classroom work. Instruction in the teaching of reading, for example, involves both classroom work and a practicum during which the student teaches reading under the supervision of his instructor. In the senior year, these experiences culminate in the semester of student teaching as the student gradually assumes the total schedule and responsibilities of the supervising teacher with whom he is working.

Urban Education

Through experience-centered programs and activities in human development and learning, efforts are directed toward the study of the complex range of problems facing urban education. The University of North Carolina at Charlotte is uniquely located in a growing and changing urban center. Cooperative planning with the Charlotte-Mecklenburg School System and with public schools in surrounding cities and counties provides unique opportunities for laboratory experiences in the inner-city, the suburban area, the small town and the

rural setting. Working with public schools and community agencies, the College of Human Development and Learning provides prospective teachers with opportunities for working with the inner-city child.

Just as important to the University as to other schools is the expertise, value and role of other community agencies in the solution of urban education problems. Through a cooperative endeavor with other agencies, members of the staff and students of Human Development and Learning work in day care centers for inner-city children, in hospitals, in correctional institutions, in agency offices and often provide recreational and educational activities for young people during weekends. Such opportunities provide excellent child study experiences, community and personal involvement and firsthand clinical experiences for students. These efforts, as illustrative of others, provide experiences for students of the University to really, for the first time, see and feel the intensity and complexity of the problems facing urban education.

Teaching/Learning Teams

Program development in the College has been designed to give emphasis to the many aspects of various *explorations in human potential,* to *involvement with people and problems* and *to commitment to personal growth and development.* Activities include tutorial programs, participation in teaching, planning of personalized educational assessment and diagnosis and the development of personalized educational programs for enrichment or remediation after assessment. Within a wide range of related activities involving pupils, teachers, schools and communities, program emphasis for University students, teachers, University staff, and pupils in the inner-city setting has given priority to the development of teams. A teaching/learning team is conceived as an organizational pattern for teaching. This model of organization is designed to capitalize on the creativity, strengths and special abilities of staff and students as learners displaying an interrelatedness of responsibilities. Effects are directed toward a more multidiscipline team approach involving many specialists from the University community and the public domain.

Courses and programs have been designed to provide observational and teaching experiences as a member of a teaching team in early childhood education, intermediate education, secondary education and in other areas of teaching interests. These experiences are directed by a team so as to provide supervision, analysis and planning by specialists in various areas. Emphasis is given to instructional change, program development and to the development of unique teaching styles. All experiences are organized with children in model settings. Public schools have been most cooperative in planning and assisting to the extent that all programs have become jointly sponsored. A wide variety of models and locations are being used.

Admission to the Teacher Education Program

Formal application for admission to Teacher Education Programs should be filed with the College of Human Development and Learning during the freshman year. Students must file applications before the first semester of their junior year in order to complete all requirements within the four-year college program. Each student will be assigned to an adviser in the College of Human Development and Learning who will coordinate his program in consultation with the adviser in the major field of concentration. Advisers in the College will confer with each student concerning long-range planning of the student's program, opportunities in the teaching field and North Carolina certification requirements.

Each student should consult with his adviser in the College of Human Development and Learning at least once each semester to review his progress in the professional sequence, to insure the completion of certification requirements, and to replan for student teaching experience. Failure to do so may delay student teaching and teacher certification.

Students should consult the College of Human Development and Learning for further details. Those interested in graduate study should consult with the College for admission and program planning.

Admission to Student Teaching

Applications for admission to HDL 450 or 451 (Student Teaching) must be filed with the College of Human Development and Learning by April 15 for the following fall semester and October 15 for the following spring semester. For admission to HDL 450 or 451, candidates must be admitted to the Teacher Education program, have a grade point average of at least 2.5 in course work completed in the teaching content area and in professional education, sound mental and physical health, good speech, the approval of the College and the recommendation of the major department. The quality of scholarship in the teaching area of each candidate shall be at a level above that minimally required for graduation.

Special Students in Teacher Education

The status "special student" in teacher education is applied to (1) students who hold a Bachelor's degree and are working toward a teaching certificate or certificate renewal and (2) visiting students who are taking courses in the teacher education program with the approval of their resident institutions.

Special students must meet the standards set by the University for admission as well as the requirements of the College of Human Development and Learning, which include above average scholastic ability, sound mental and physical health and good speech. The student who has obtained a degree at another institution and wishes to be certified by this institution will be required to take at the University of

North Carolina at Charlotte a minimum of two courses in his major area, one course in human development and learning, and student teaching. Under special circumstances, these requirements may be waived. Students should consult with the College of Human Development and Learning for further details.

National Teacher Examination

A candidate for an elementary or secondary school teaching certificate in North Carolina must file evidence that the National Teacher Examination has been taken before a certificate may be issued. Both common and teaching area examinations must be taken by the applicant. Students should consult with the College of Human Development and Learning for further details.

Teacher Placement

The Placement Office in the Division of Student Affairs, in cooperation with the College of Human Development and Learning, provides placement services for qualified graduates. All students in the Human Development and Learning program are urged to complete their credentials since most school systems request them from the University when candidates are applying for positions. In addition, school administrators may contact the University for prospective candidates who are registered with the Placement Service.

Curriculum Materials Center

Located in the Dalton Tower, the Curriculum Materials Center contains current textbooks and related curriculum materials representing all subject areas and grade levels taught in the public schools. The center receives approximately 60 education and related periodicals. A vertical file containing non-catalogued education materials is an integral part of the center. The library is a government document depository; thus, federal government publications pertaining to education are available.

Psychological Testing Laboratory

The Psychology Department maintains a psychological testing laboratory in which students gain experience in the selection, administration and evaluation of psychological and achievement tests. A library of literature on test instruments for student use is kept current.

Learning Resources Center

As part of the College of Human Development and Learning, the Learning Resources Center provides all students laboratory experiences in teaching learning resources. The latest audiovisual

equipment and teaching media will be available for individual student familiarization. Instruction in the use, preparation and evaluation of teaching media as a functional aspect of teaching will be included.

Undergraduate Programs

Undergraduate programs in teacher education are coordinated with programs of study in a major field of concentration. Approved programs are offered in Early Childhood Education, Intermediate Education, and in Secondary Education. In addition, approved programs in the special areas of art and music at the K-12 level are offered through the Creative Arts Department of the College of Humanities and the College of Human Development and Learning. Students interested in certification in these areas must major in the BCA program.

Programs as outlined below meet the certification requirements of the North Carolina State Board of Education and the requirements of most other states. Students who plan to teach outside North Carolina are strongly urged to check certification requirements with the College of Human Development and Learning before the end of the sophomore year so that programs may be planned appropriately.

The programs of undergraduate study are organized into three areas:

I. General Requirements for Teacher Education Students

		Semester Hours
	English 101 English 102 English 201 English 202 or 203 or 204	12
Humanities	Creative Arts, History, English Philosophy, Religious Studies and Foreign Language (see a, b)	6
Mathematics	Mathematics 101 and 120 **or** Mathematics 103 and 104, **or** Mathematics 130 and 131 (see a, c, d)	6
Natural Science	Psychology 101 Physical Science Biological Science	12
Social Science	History 101 or 102 and any three semester hours of 100-level history courses. Students are encouraged to take courses in African, Asian, and Latin American history. One course in at least two of the following: Anthropology, Economics, Geography, Political Science, Sociology	12

Health and Physical Education	Health Education 409	3
	Physical Education Activity (Secondary)	1
	Physical Education 409 (K-3 and Intermediate)	3
	Speech Competency	0
	Total	50-53

Notes

a. If six hours of foreign language are used to meet the humanities requirement, only one course in mathematics is required. Early childhood and Intermediate teacher candidates must complete six hours of creative arts in the areas of art and music.

b. Philosophy and religious studies may only be used to meet three hours of the requirement.

c. A course in logic may be substituted for one course in mathematics.

d. Elementary teacher candidate will take Mathematics 130 and Mathematics 131.

The general degree requirements are presented as specific subject matter disciplines, but this does not preclude the meeting of the requirements through integrated courses. Adaptation to individual needs will be made by the College of Human Development and Learning. The above represents a minimum degree program in general education in accordance with the *Standards and Guidelines for the Approval of Institutions and Programs for Teacher Education,* North Carolina State Board of Education.

II. Professional Sequence

Elementary
(Early Childhood and Intermediate)

Freshman or Sophomore Year		*Semester Hours*
HDL 201.	Introductory Explorations in Human Potential	3
PSY 202.	Educational Psychology	3

Sophomore or Junior Year

HDL 303.	Elementary Education I: Organization and Curriculum	3
HDL 301.	Reading and the Language Arts	3

Senior Year

HDL 570A	Living/Learning Styles	3
HDL 304.	Philosophy of Education	3
HDL 401.	Elementary Education II: Methods and Materials	3
HDL 450.	Student Teaching: Elementary	6
	Total	27

Secondary

Freshman or Sophomore		*Semester Hours*
HDL 201.	Introductory Explorations in Human Potential	3
PSY 202.	Educational Psychology	3

Senior Year

HDL 570A	Living/Learning Styles	3
HDL 304.	Philosophy of Education	3
*HDL 402.	Methods of Teaching in Secondary School	3
*HDL 451.	Student Teaching: Secondary	6
	Total	21

III. Major Teaching Fields

Candidates who plan to teach in elementary school will fulfill the following requirements:

(1) All required couses for graduation.

(2) A major in one of the academic fields (a minimum of 27 semester hours). Elementary candidates majoring in Psychology must, in addition, have 18 hours in an academic discipline normally taught in elementary school.

(3) Subject-matter requirements for teacher certification listed below:

	Semester Hours
Creative Arts	6
English 303	2
Earth Science 101 and Geography 102 or 303	7
Health Education 409	3
History 103 or 104 and three semester hours of any 100-level history course. Students are encouraged to take courses in Asian, African, or Latin American history	6
Political Science 110	3

Secondary

Candidates who plan to teach in secondary school will fulfill the following requirements:

(1) All required courses for graduation.

(2) A major in the academic field in which they plan to teach.

(3) Related work approved by the major department.

(4) Subject-matter requirements for teacher certification in selected field(s) as listed below:

	Semester Hours
English	36
Language (Grammar, composition, rhetoric, history and analysis of the English language, etc.)	12
Literature (English and American literature)	12
Language and Literature Skills (Reading, interpretation of literature, oral and written exposition, the library, and journalistic writing)	6
Electives from above areas	6
Mathematics	30
Calculus and analytic geometry	9
Algebra (Must include modern abstract and linear algebra)	6
Geometry	3
Electives in Mathematics (Must include work in history of mathematics, computer science and probability and statistics.)	12
Modern Foreign Language	30
Grammar, composition, and phonetics	9
Literature	9
Language skills (Understanding, speaking, reading, and writing)	6
Literature, History, and Civilization of the country being studied (The 30-hour requirement in a language assumes that one has had two or more high school units in that language when entering college.)	6
Science	48
(1) Common Foundations	24
Mathematics	6
Six semester hours each from three of the following:	18
Biology	
Chemistry	
Physics	
Earth Science	

(2) A concentration in one area 20
Biology
Chemistry
Physics
Earth Science
(3) Electives 4
Certification in the individual science areas should give depth sufficient to assure reasonable competence as a teacher in the subject of concentration. A program for certification in a particular area (biology, chemistry, physics or earth science) should comprise approximately 20 percent of a teacher's undergraduate curriculum (24 semester hours)

Social Science 42
(1) History—American and world 21
(2) From three or more of the following 21
(There should be about equal emphasis on all areas chosen.)
Anthropology
Economics
Geography
Political Science
Sociology
A program for certification in individual areas (anthropology, economics, geography, history, political science or sociology) should comprise approximately 20 percent of a teacher's undergraduate curriculum (24 sem. hours)
History 30
Certification in history (secondary school teaching) is made possible by satisfactory completion of a major.

COURSE DESCRIPTIONS

HUMAN DEVELOPMENT AND LEARNING

Teacher education programs and most professional certification guidelines require professional study in at least four areas: Social and Philosophical Foundations, Psychological Foundations, Curriculum and Instruction, and a Clinical Experience. Therefore, to assist the student in selecting courses to meet requirements in each professional area, courses are listed by areas.

I

EXPLORATIONS IN HUMAN POTENTIAL

Philosophical, Psychological, and Social Foundations

HDL 201. INTRODUCTORY EXPLORATIONS IN HUMAN POTENTIAL. (3) An introductory course in the philosophical foundations of the educative process designed to explore the nature of man, and human potential in relation to one's system of beliefs, values

and relationships. Emphasis is given to the analysis and development of the student's beliefs, his personhood and to his role in relationships. Clinical experiences are provided to introduce the student to teaching/learning relationships and to a sociological orientation of growth and the school in modern society. Open to freshmen.

HDL 304. PHILOSOPHY OF EDUCATION. (3) Prerequisites: HDL 201 and PSY 202. A study of the educational philosophies of the contemporary period and the basic assumptions upon which statements about modern education rest. Extensive readings in text and source materials.

II

MEANING AND GROWTH IN TEACHING/ LEARNING RELATIONSHIPS

Curriculum and Instruction

HDL 301. READING AND THE LANGUAGE ARTS. (3) Emphasis on oral and written communication, with special attention to the teaching of reading; appraisal of current programs and methods. This course required for all students planning to teach on the elementary level. Prerequisites: HDL 201, PSY 202 and HDL 303 or permission of instructor.

HDL 303. ELEMENTARY EDUCATION I: ORGANIZATION AND CURRICULUM (3) A course designed to develop an understanding of the curriculum of the elementary school. Emphasis is placed on the role of the teacher in the design, organization and administration of the elementary school. Major consideration is given to approaches to instructional organization such as multi-age grouping and team teaching as they relate to the curriculum. Prerequisites: HDL 201 and PSY 202.

HDL 401. ELEMENTARY EDUCATION II: METHODS AND MATERIALS. (3) Prerequisite: HDL 303. Major consideration is given to the methods and materials used in teaching at the various grade levels in the elementary school. Emphasis is placed on the preparation of lesson plans and units.

HDL 402. METHODS OF TEACHING IN SECONDARY SCHOOL. (3) Prerequisites: HDL 201 and PSY 202. Aims, methods and materials of teaching a subject at the secondary level. Also considered are the following: organization of the curriculum, pupil promotional patterns and classroom management.

402-a ..... English
402-b ..... Foreign Languages
402-b-1 ..... French
402-b-2 ..... Spanish
402-b-3 ..... German
402-c ..... Mathematics
402-d ..... Sciences
402-e ..... Social Sciences

I

THE HELPING RELATIONSHIP

HDL 463. GUIDANCE: BEHAVIOR AND GROWTH. (3) An introduction to the study of guidance in the context of the helping relationship. Emphasis is given to the development of understandings, approaches and techniques for helping others make decisions directed toward the solution of problems and the facilitation for self-understanding and growth. Open to students not seeking teacher certification.

IV

EXPERIENCE AND COMMITMENT IN HUMAN DEVELOPMENT AND LEARNING

HDL 450. STUDENT TEACHING: ELEMENTARY. (6) Prerequisite: education sequence and approval of the College of Human Development and Learning. Observation and teaching in an elementary school. Student teaching is conducted on a full-time basis during the major portion of the semester is carried out under College supervision in cooperating public schools.

HDL 451. STUDENT TEACHING: SECONDARY. (6) Prerequisite: Education sequence and approval of the College of Human Development and Learning. Observation and teaching in a secondary school. Student teaching is considered on a full-time basis during the major portion of the semester and is carried out under College supervision in cooperating public schools.

Courses for Advanced Undergraduates

HDL 570. SELECTED TOPICS IN HUMAN DEVELOPMENT AND LEARNING. (3-6) Prerequisite: HDL 201 and permission of the College of Human Development and Learning. Topics and special problems chosen in relation to human learning, ideas, practices, significant movements or detailed study of models for human learning. Seminars, independent study and clinical experiences. May be repeated for credit, with approval.

DEPARTMENT OF HEALTH AND PHYSICAL EDUCATION

Chairman: Associate Professor Murphy
Associate Professor: Bostian, Tillotson
Assistant Professors: Dawson, Healey
Instructors: Avant, Kerr, Kingery, Moore

The University requires *all* new students enrolled or planning to enroll in a physical education course to obtain a signed statement from

a medical doctor stating that participation in such courses would not be harmful to the student or to sign a medical waiver form.

1. *For entering freshmen*—Part III of the Medical Admissions Requirement Form must be signed. This form is valid for one year and if freshmen wish to enroll in a physical education course in the sophomore (second) year, a new form must be secured and signed or a medical waiver form must be signed at registration.

2. *For transfer students*—Part III of the Medical Admissions Requirement Form must be signed. This form is valid for one year. A student wishing to enroll in a physical education course after this one-year period has elapsed must secure and have a new form signed or a medical waiver form must be signed at registration.

3. *For continuing students*—Students must have a signed medical form dated one year or later from the beginning of the first day of class to be eligible to enroll for a physical education course or sign a medical waiver form at the time of registration.

Example: A continuing student wishing to enroll in a physical education course starting August 22, 1974, must have a signed statement dated August, 1973, or later. A student wishing to enroll in a physical education course starting January, 1974, must have a signed statement dated January, 1973, or later. A medical waiver may be signed at registration in lieu of the medical form.

COURSE DESCRIPTIONS

HEALTH EDUCATION

HED 101. HEALTH EDUCATION. (1) A general introductory course. Basic ideas of human anatomy, physiology and chemistry are applied toward an understanding of human health problems. Two lecture hours a week.

HED 409. HEALTH EDUCATION LABORATORY. (3) Prerequisites: HED 101 and HDL 303. Health instruction, principles of health teaching for the elementary grades.

PHYSICAL EDUCATION

PED 101. FOUNDATIONS OF PHYSICAL CONDITIONING. (1) The application of various physical training programs designed to improve and maintain physical fitness. One-sixth of the meetings will be devoted to lectures on physiological and psychological aspects of physical training. Three one-hour meetings a week.

PED 102. WEIGHT TRAINING. (1) The basic mechanics of weight training. Emphasis on anatomy, tests and measurements, individual strength development and isometric training. Three laboratory hours each week.

PED 103. FENCING. (1) The skills and rules of the sport of fencing. Three hours each week.

PED 110. BEGINNING SWIMMING. (1) Designed to teach weak or non-swimmers a basic stroke and safe entry into and exit from the water. Three laboratory hours each week.

PED 111. INTERMEDIATE SWIMMING. (1) Prerequisite: PED 110 or permission of instructor. Emphasis on gaining competency in at least four basic strokes and two dives. Three laboratory hours each week.

PED 112. SENIOR LIFE SAVING. (1) Prerequisite: PED 111 or instructor's permission. Qualifies swimmer for the American Red Cross Senior Life Saving Certificate. Three laboratory hours each week.

PED 113. WATER SAFETY INSTRUCTION. (1) Prerequisite: PED 112 or equivalent. Qualifies the student for the American Red Cross Water Safety Instructor's Rating. Three laboratory hours each week.

PED 115. WATER SPORTS. (1) Rules and skills of water polo and water basketball. Three laboratory hours each week.

PED 119. SCUBA DIVING. (1) Prerequisite: tread water five minutes and swim 440 yards (no time limit). Science and skills associated with the use of self-contained underwater breathing apparatus. For beginners only. All equipment furnished. Three laboratory hours each week.

PED 120. BEGINNING TENNIS. (1) The rules, history, basic skills and basic strategy. Three laboratory hours each week.

PED 123. BEGINNING BADMINTON. (1) The rules, history, basic skills and basic strategy. Three laboratory hours each week.

PED 125. BEGINNING HANDBALL. (1) The rules, history, basic skills and basic strategy. Three laboratory hours each week.

PED 140. BEGINNING GOLF. (1) The grip, stance, stroke, use and selection of clubs, history, rules and etiquette. Three laboratory hours each week.

PED 142. ARCHERY. (1) The fundamental skills and selection, care and repair of equipment. Three laboratory hours each week.

PED 150. VOLLEYBALL. (1) The rules, history, etiquette, correct method of serving, passing, setting-up, spiking and blocking the ball, offensive and defensive team play and officiating are emphasized. Three laboratory hours each week.

PED 160. GYMNASTICS. (1) Single and combinations of stunts on the side horse, horizontal bar, parallel bars, uneven parallel bars, still rings, balance beam, trampoline and tumbling mats are taught. Emphasis is placed on fundamentals so the student can exercise creativity in constructing routines. Three laboratory hours each week.

PED 409. PHYSICAL EDUCATION LABORATORY. (3) Prerequisite: HDL 303. Physical education instruction, principles of physical education teaching for the elementary grades.

College of Humanities

Dean: Professor Mathis

The College of Humanities includes the area of Black Studies and the Departments of Creative Arts, English, Foreign Languages, History, Philosophy and Religious Studies.

AMERICAN STUDIES

Coordinator: Professor Mason

The American Studies emphasis is intended to allow a student to focus strongly on various aspects of the culture of the United States while also gaining further variety of background from other facets of the University's curriculum. It is hoped that through this concentration he will gain insight into the interrelatedness of various aspects of American life, both past and present. (Students intending to teach in junior or senior high school should also find such an interdisciplinary emphasis to be very advantageous.)

A student desiring an emphasis in American Studies will major in English or History (following the basic pattern of one of those majors) and will take 27 hours in courses allowed toward the American Studies emphasis. In most instances there will be some overlapping of the requirements for the degree proper and for the American Studies emphasis.* All American Studies students will take American Studies 301, Introduction to American Studies, no later than the junior year, sooner if possible. Also, each is to take at least three hours of American Studies 303 after taking 301.

Following are examples of possible distribution of courses in a minimum American Studies emphasis. Presuming only courses with academic credit of three hours each, the student would have to take nine courses for the emphasis. Those nine courses (27 hours) would be divided in one of these three ways:

1. *Three courses in major department*, and *six courses outside major department* (including:
   American Studies 301 (required)
   American Studies 303 (required)
   Four other approved courses outside major department)

*In the department of the student's major, 12 of the 27 hours for the American Studies emphasis also will be accepted as part of the courses in the subject of the major which are required for the department's degree if the student wishes to so apply all or part of 12 of the 27 hours of the emphasis; and the department may accept more than 12 hours for its requirements for the major if it finds it appropriate to do so. The other courses of the 27 hours will be applied, as appropriate, to other University requirements for the degree. In the American Studies emphasis, a maximum of 15 hours and a minimum of nine hours of courses in the department of the major are to be applied toward the 27 hours required for the emphasis. For example, an English major also acquiring an American Studies emphasis is assured that at least four of the nine courses for the emphasis can be counted toward the hours in English required for the major. The other five courses will be applied to other parts of the degree requirements. On the other hand, at least three and no more than five of his nine American Studies courses are to be in English. (This example presumes courses with academic credit of three hours each.) This arrangement allows and encourages the student to go in two directions at once (one traditional and one focused interdisciplinary), both within the time usually spent as an undergraduate.

2. *Four courses in major department,* and *five courses outside major department* (including:
   American Studies 301 (required)
   American Studies 303 (required)
   Three other approved courses outside major department)

3. *Five courses in major department,* and *four courses outside major department* (including:
   American Studies 301 (required)
   American Studies 303 (required)
   Two other approved courses outside major department).

(In each of the above examples the student is allowed by his major department to credit at least 12 hours toward the major courses for his degree if he so wishes, and in the last example, 15 hours can be so credited.)

To meet the requirements for the emphasis, a student also must have at least a 2.0 average on the courses offered for it. Students in this program will be advised by that person in the department of the major designated to advise American Studies students. Variety of experience is encouraged. American Studies students are also encouraged to take parallel courses during the same semester when possible (e.g., Southern history and Southern literature during the same semester). The degree will be in English (American Studies) or History (American Studies) and will be so indicated on the student's transcript.

COURSE DESCRIPTIONS

AMERICAN STUDIES 301. INTRODUCTION TO AMERICAN STUDIES. (3) To be taken by all students taking an emphasis in American Studies. Should be taken by them no later than the junior year and sooner if possible. An introduction to the rationale of American Studies and an application of it to a small span of American chronology to reveal the interrelationships of as many facets of American culture as possible. For example, the student might be helped to see the interrelatedness of such things as philosophy, religion, literature, music, politics, science, business and industry, art, etc., in the United States during a single decade, the significace of that interrelatedness, and how to apply for himself the same approach to other periods. (Not limited to American Studies students. Can be counted as a humanities course for general degree requirements.)

AMERICAN STUDIES 303. INDEPENDENT STUDY OR DIRECTED READING IN AMERICAN STUDIES. (3) May be repeated once for credit, with permission of the student's adviser. (Not limited to American Studies students but should be under the supervision of an American Studies adviser or someone designated by him. Can be counted as a humanities course for general degree requirements.)

AMERICAN STUDIES 350. TOPICS IN AMERICAN STUDIES. (3) To be offered from time to time to supplement courses already

available, to offer an American focus not available elsewhere in the University, or to provide cross-disciplinary courses with an American focus. For example, courses on American literature and art, American philosophy and politics, American folklore, etc., might be made available as their being offered is deemed appropriate. May be repeated for credit with permission of the student's adviser. (Not limited to American Studies students. Can be counted as a humanities course for general degree requirements.)

The following additional courses have been approved for the American Studies emphasis. However, appropriate deletions or additions may be made from time to time. The American Studies advisers will have up-to-date lists. Also, consideration will be given to approval of other courses of special interest to the student, especially topics courses or individual study, if pertinent to American Studies.

(*Courses with an asterisk are especially recommended for American Studies students.)

English: 204 (acceptable only for non-English majors taking only one course in American literature), 341, 342, 343, 344, 345, 347, 348, 349, 441, 445;

History: 103 and/or 104 (acceptable only for non-history majors who take no other American history courses), 371, 372, 374, 375, 377, 378, 379, 380, 386, 391, 393, 414*, 415*;

Liberal Engineering: 311;

Black Studies: 101, 102;

Philosophy: 425*;

Religious Studies: 204, 331*; 332;

Social and Behavioral Sciences: 397, 398;

Geography: 303*, 341, 403;

Political Science: 201*, 301, 303, 307*, 309, 311, 315, 317, 319, 321*, 322*, 496;

Sociology: 310*, 321, 325, 432.

BLACK STUDIES

Director: Frank Porter Graham Associate Professor Maxwell

COURSE DESCRIPTION

BLS 101. THE BLACK EXPERIENCE. (3) Prerequisite: consent of the instructor. Core course for all students with a keen interest for the personal development of Black awareness. Opportunities for exploration of self definition and development of interpersonal relationship skills which will create and facilitate effective community dialogue and action.

BLS 102. THE BLACK EXPERIENCE II. (3) Prerequisite: 101 or consent of the instructor. Core course for all students with a desire for further personal development of Black awareness. Student orientation to experiences in education involving a Black perspective. Insight concerning the significance of an Afro-American experience in education as a relevant and serious topic for study and examination.

BLS 301. WEST AFRICAN LITERATURE. (3) Prerequisite: consent of the instructor. A survey of West African Literature reflected in fiction and poetry. Both the oral tradition and works of recent West African authors will be treated.

BLS 350. TOPICS IN BLACK STUDIES. HISTORY 492A. Western Africa to 1850. (3) Prerequisite: consent of the instructor. A study of selected Sudanic and coastal societies; their origin, development and interaction with Europe and Islamic worlds. This course is designed to offer special topics not included in other courses and may be repeated for additional credit.

DEPARTMENT OF CREATIVE ARTS

Chairman: Associate Professor Luca DiCecco

Art
Associate Professor: Anderson
Assistant Professors: Byrum, Hill, Hybel, Mason, MacKillop
Instructors: Bringle, Soellner

Music
Professor: Mathis, Booth
Associate Professors: Cobos, DiCecco, Dailey
Assistant Professors: Gaither, Mosley, Reid, Turner
Instructor: Benjamin

Theater
Professor: Nicholson
Associate Professor: Rackley
Assistant Professor: Beasley
Instructors: Croghan, Tucker

Dance
Assistant Professor: Zimmermann

BACHELOR OF CREATIVE ARTS DEGREE PROGRAM

Introduction

The Bachelor of Creative Arts program is based on the idea that learning and the creative process works best with individuals, rather than groups—that only individuals and not groups learn and create.

What the BCA Program Proposes

The BCA offers each student more than just a degree in the creative arts. First, it places initiative on the individual student and his ability to perceive relationships (problem-solving). Second, it offers a new relationship between student and teacher. Rather than dividing students into classes, feeding them information and expecting all students to assimilate the same material identically, the faculty member serves as an adviser and resource person.

Third, it allows the student to explore facets of the arts which interest him and relate to his talents. Finally, recognizing that education extends beyond the bounds of mastering only one art, the student is encouraged to explore all aspects of creativity, the arts and their relationship to man and his development. To accomplish this, the student has at his disposal all of the University's resources.

Admission to the Program

Upon admission to the University of North Carolina at Charlotte, a student may apply for admission to the Bachelor of Creative Arts program. The prospective student will be requested to interview with the faculty from the major area of his interest: art, creative writing, dance, music or theater. Additionally, a student will be asked to audition, submit a portfolio and generally give as thorough an accounting of his background as possible. Within a reasonable amount of time after his interview, a student will receive notification of the success of his application to the Bachelor of Creative Arts program.

MECHANICS OF THE PROGRAM

A. Eligibility: The program is open to all students eligible for admission to the University of North Carolina at Charlotte. Since the program is flexible and organized around the individual student's motivation and interests, a student may enter the program from another division within the University or transfer from another institution at any level. Evaluation of traditional credits is necessary since the experiential aspects of seeking and discovering relevance and relationships is a subjective process and since the student's thrust, interest and pace are his own. Advancing through the program and the completion of the degree are determined by the continuing process of evaluation (see below).

B. Continuing Students: The continuing student will begin his work on the BCA at his present level.

C. Transfer Students: Any person from outside the Creative Arts Department coming into the BCA program is considered a transfer student.

D. Withdrawal: The faculty and the student involved in the total efforts of a student who is withdrawing from the program will equate his work into conventional hours credit, including grades and quality points. Additionally, a prose record of evaluation will become a part of the student's permanent record at this institution, to be shared with the institution being transfered to if that institution so desires.

E. Central Information Chart: A continuously running calendar blocked off into days has been set up. The following information is communicated by means of this calendar: activity, date, time, leader, etc. These will be posted by individual faculty members prior to the activity. Time conflicts can be minimized by checking the CIC before scheduling the activity.

F. Structural Method:

1. General Contractual Procedure: a. The student writes a proposal that states and defines a problem at its beginning and indicates a possible direction toward a solution. b. If a change of direction or completion date is undertaken before the final evaluation, the project adviser must be consulted. c. Reviews, bimonthly and master, are in oral and/or written forms. The reviews of the students' works are done by the student, his fellow students and the project adviser(s). d. The master review is kept on file in the office of the creative Arts Department until graduation. (The student and his adviser receive a copy of each master review report.)

2. Seminars: Seminars and group sessions cited in the outline are free-forming interacting groups, focusing on specific common interests and problems.

3. Review and Evaluation: Because of the nature of the program, the student's major adviser and his other mentors are constantly involved with the student in evaluating. The program is intended to develop within the student honest self-examination and self-evaluation. The success of the student will, to a great degree, be determined by his own increasing ability to assess and evaluate his own potential, commitment and accomplishment. Semester and yearly evaluation procedures (see below) serve an educative function in that they involve the student in self-evaluation and in confrontation with evaluation by his peers and his instructors.

By the end of each semester, evaluation of the student's progress will have been made by the student's advisee group, consisting of faculty and students. This will follow a self-evaluation in advisement with the student's adviser. The grade designation will be:

P - PROGRESSING
S - SATISFACTORY
U - UNSATISFACTORY

Since the evaluation is based on the student's moving toward becoming an independent, self-motivating learner, only one grade will be assigned. At the end of each year, the student will have:

a. evaluated himself in advisement with his adviser;

b. participated in an evaluation of his progress with the student-faculty in his advisee group.

The grade designation will be:

P - PROGRESSING
S - SATISFACTORY
U - UNSATISFACTORY

The grade of *P* reflects awareness and in-depth involvement within the self-evaluation guidelines.

The grade of *S* reflects momentum towards realization of the self-evaluation guidelines.

The grade of *U* reflects a lack of interest, participation and motivation towards realization of the self-evaluation guidelines.

Since the program is geared to the student's specific interests and insights, a student whose yearly evaluation is unsatisfactory will be encouraged to reassess his goals and his desires and abilities to move productively on his own. This reassessment will be done by the student's group. This effort will be toward helping the student determine the field and the structure in which he can function more productively, rather than simply eliminating him from the Creative Arts program.

G. Teacher Certification: If a student selects education in the arts as his major area, in order to receive professional certification, he would not take general courses usually required to fulfill such certification. Teacher certification through the BCA requires: 1. A student must declare certification intent at least four full semesters prior to the awarding of his degree. 2. The student must demonstrate proficiency in communication and humanities;

natural, social and behavioral sciences; psychological and sociological foundations of education; parent-school-community relationships; curriculum activities; and techniques; and materials, methods and practices appropriate to the teaching area and level. A student must show an awareness of the various educational philosophies relating to the arts. 3. Student teaching may be done in connection with projects. The 90 to 150 clock hours required in actual classroom teaching may be carried on within the eight semester residency as the student feels the need to put himself in teaching situations.

H. Residence: The complete program will require a minimum of eight semesters; the final two of which must be done in the BCA program. A full semester term is equal to one semester. For a transfer student, any semesters completed before entering the program will apply toward this minimum.

I. Completion of Degree

1. Recommendation by principal professor, by two other professors in the field and by two professors from outside the candidate's field.

2. Appraisal of candidate's portfolio, manuscripts or performance by the principal professor and by two other professors from the Creative Arts faculty.

3. Recommendation by a review board of three students from candidates field. These boards were elected by all of the students in each of the specific fields.

I. *First Year*

A. *Art*

A first year program designed to offer the beginning student in art:

1. A thorough orientation to the objectives of the BCA program and the personal involvement necessary to achieve independent status.

2. An understanding of the basic visual fundamentals, principles and art theory necessary to the formulation of projects and independent research.

3. A format for learning that offers an alternative method of education in the arts, with emphasis on the interrelationship of the arts and the other academic areas.

4. An opportunity to work independently, and in groups, with students of similar needs, directions and levels of artistic development.

5. An opportunity to fail with recourse for establishing positive new directions.

6. An opportunity to work with experienced students in the program to help establish sound working patterns necessary for personal achievement and satisfaction.

7. A foundation for the development of personal as well as artistic maturity.

8. The responsibility of learning to design one's own educational future.

9. An opportunity to work with all area coordinators and faculty to help orient your needs as a first year student.

10. An opportunity not every student can handle or cope with, the first year program is designed to help the student move as gracefully as possible in his educational process, but this method is not guaranteed for all. The student will be asked to make this evaluation the first year.

Semester I

Phase I *2 wks.* Orientation to the BCA
Seminars, workshops, experience in learning.

a. What is the BCA? (The philosophy, specific and general.)
b. Role of student
c. Role of adviser
d. Role of coordinators and chairman
e. Role of peers, peer evaluation, advisee group
f. Resource persons and faculty
g. Role of artist as problem former and solver
h. Problem solving techniques
i. Why paper work is necessary and who is responsible
j. Summation of mechanics, individual roles, philosophy and responsibilities

Phase II *6-7 wks.* Presentation of seminars by various faculty and faculty teams of visual fundamental and interrelated principles.

a. Project formation as related to the elements of design
Project formation related to principles and fundamental theory
c. Criticism and evaluation - project work

d. Art area faculty seminars
e. Tri-area seminars - small groups on project design
f. Art history block - flexible
g. Summation and analysis

Phase III *2 wks.* Making contacts outside the BCA and Rowe Arts Building

a. Short term projects outside Rowe Arts testing relationship of the art and the artist to other academic areas.

Phase IV Participation in faculty advisee group meeting and interest area seminars.

a. Responses, questions, summation
b. Semester evaluations

Semester II

Phase V *6-8 wks.* Continuation of visual fundamental seminars as pertaining to specific areas and media.

a. Working more with applied faculty
b. Formulation of possible interest areas and directed study.
c. Media survey and exploration - seminar work.
d. Project continuum theory - what is the need?
e. Summation

Phase VI *2 wks.* Mock project proposal and critical analysis

Phase VII *2-3 wks.* Actual project work reference to visual fundamental exposure and evaluation by entire freshman group, coordinator, related faculty.

Phase VIII Assignment of advisers by April 15, analysis of first year program and screening for students seeking second year status

The art area coordinator is responsible for the freshman student's progress through the entire first year. The student is responsible to the coordinator by attending weekly group meetings and individual advising sessions.

1. The new student program in music is designed to smooth the transition for freshmen and transfer students from a structured educational environment to an unstructured one. Each new student in the Bachelor of Creative Arts must make this adjustment in order to embark upon a program involving self-motivation and initiative. An attempt is also made in the new student program to clarify the ideal of the BCA program and to give practical experience to each student in the problem-solving technique. It is hoped that during the first year, the student will begin to develop a perception of the arts as they relate to one another.

   A. Orientation discussions: Daily sessions to help the student understand how he can best develop his abilities in the BCA program. These discussions will include descriptions of how we go from the specific to the general; that education can be achieved through music, rather than the education being assimilated in order to "get at" art.

   B. Define goals: Each student expresses his educational and professional goals. This is necessary in order to help him determine his course of study at UNCC. Consideration is made as to not only "What basic skills do I need?," but "What kind of person is needed to carry out this plan successfully?"

   C. Identify resources: Procedures for use of the library and the Rowe listening lab are outlined. The Rowe Project Board and music area Resource Board are introduced. Workshops and seminars and the procedure for establishing both are described.

   D. Specialized resources established: Faculty members are introduced and their special fields of interest described. Students then identify their principal or "applied" professor, and an association is established. Ensemble work is encouraged and organized for instrumentalists and vocalists, and composers are organized into a peer group. Teacher certification is discussed and interested students identified.

2. Group Activity: Designed to demonstrate how one can begin with sound and learn about music: a beginning in process of starting with music and learning about other aspects of education as they relate to music.

A. Melody. Through the study of a melody, the group will consider notation, ear-training, theory, style, color, shape in music.

B. Harmony. Using their own melodies, the students will discuss tonal and non-tonal techniques of composition. Style and the effect of different styles will be considered, thus incorporating the related fields of psychology, acoustics and history, to name a few.

C. Rhythm. Motion and speed will be discussed.

D. Tone color. The drawing together of these experiences with melody will be the expression of the melody in its intended medium. This may necessitate the study of instrumentation, vocal potentials, electronic devices, ancient performance practices or, simply, development of the composer's ability on his instrument.

3. Project. Association with the applied professor will result in the emerging of a piece of music as a significant concern for the student. A project will evolve, and, as it does, the group will help the student develop the project's many facets. Procedures for drawing up a project proposal will be outlined, and presentation of the project described.

4. At the completion of a project, the student will be evaluated by a group consisting of his major adviser, his applied professor (project adviser) and his advisee group, perhaps including peers who are not in the advisee group.

5. The Arts: A series of experiential workshops will be set up to discuss activities within and outside the Rowe Building. These will be open to all students and faculty, conducted by appropriate faculty and/or students and designed to whet the curiosity of all and increase knowledge and awareness of the arts as they relate to one another and to life.

C. *Theater*

Freshman theater students, as well as transfer students without a background in theater, form the area coordinator's advisee group. It is desirable to have these freshmen students in one group in order to satisfy two needs:

1. the need to have freshmen understand the concepts and mechanics of the Creative Arts program with some consistency;

2. the need to provide freshmen students with a forum in which they can discuss problems knowing that no one in the group is more experienced in dealing with such problems-a lessening in the students' fears of intimidation and ridicule.

The coordinator is responsible for assuring that the freshman is acquainted with and exposed to the other faculty members and upperclassmen. In addition to whatever exposure the student seeks on his own, he will be in contact with other Creative Arts faculty members through productions, workshops and seminars; he will be in contact with upperclassmen through productions, workshops and a "student adviser" plan through which each freshman is assigned an upperclassman who is available for consultation on problems dealing with the Creative Arts program and adjusting to university life.

The transfer student with a background in theater would be duplicating experience needlessly should he/she be a member of the coordinator's advisee group. Therefore, such transfer students are assigned to other faculty members as advisees. These students are encouraged to attend sessions with freshmen which deal with the concepts and mechanics of the Creative Arts program. Such a decision, however, should be made by the adviser and the student.

1. Conferences with Adviser (Area Coordinator):
   Each student in the first year program meets with the coordinator of the theater area at frequent intervals during his/her first year. During these meetings discussion centers around three major topics:
   A. A determination of the student's interests and level of artistic and humanistic development;
   B. The establishment of a program of study for the first year designed to strengthen the student's major interest area and to offer fundamental skills and a basic orientation into other areas of the theater arts;
   C. The development of the student's awareness of various resources-including people, books, seminars, etc.-pertinent to the student's interests and personal growth.

2. Advisee Group Meetings:
   All first year students meet with the coordinator twice a week as a group. The specific content dealt with in these meetings is dependent upon the needs of the group. Three broad categories of topics are considered:
   A. The mechanics of learning in the Creative Arts program (the problem-solving approach, individual movement from the specific to the general, the project proposal, etc.);

B. The evaluation process as the core of the Creative Arts program—self-evaluation, group evaluation and adviser evaluation; "P, S, and U" as meaningful evaluation designations;

C. The oral presentation, discussion and evaluation of each individual student's work-in-progress. This will lead to detailed consideration of ideas, structure and expression in specialized areas of the theater.

3. Participation in Theater Productions:
Each freshman and transfer student is expected to participate in some aspect of each theater production offered by the Department of Creative Arts during the year. Involvement must not be limited to the student's major interest. The student should seek experience in as many phases of theatrical production as possible: acting, stagecraft, stage lighting, costuming, properties, sound, make-up, publicity, front-of-house and, in some cases, design and directing.

4. Workshops:
Workshops will be organized to augment the student's experience in the area of his/her major interest and to supply fundamental knowledge, skills and experience in other areas of theater. A workshop should coincide with the student's involvement in a particular production. Workshops in the student's major interest, if one is developed by this point, may be continued. These workshops will be staffed by members of the theater faculty and by advanced, qualified students.

D. *Dance*

Dance in the Bachelor of Creative Arts program, has been implemented in the 1974-75 academic year. For further information, please contact the Department of Creative Arts.

II. *Second Year*

Conferences with consulting professors (to be arranged). The student, with his major adviser, plans a course of study tailored to his interests and needs. Such a plan would involve consultants from various department in the University who would serve as resource mentors.

A. *Music*

1. Musicianship studies

a. Independent projects: Study areas are to be determined by the student's special interests and

skills; such as counterpoint, composition, orchestration and conducting. Such interests as the musical significance of the historical development of instruments, the psychological and physiological mechanisms of the production and perception of sound and the cultural milieu of certain musical styles should lead the student to investigations involving fields other than the Creative Arts.

b. Seminars: These seminars involve the topics arising from independent projects. The purpose is to present an integrated view of the evolution of music—its literature, theory and changing compositional and performance practices.

2. Performance studies

a. Individual

b. Ensemble

B. *Visual Arts*

1. Studio

a. General floating seminars, e.g., Visual Fundamentals, Methods, Techniques, etc.

b. Individually oriented investigations. The student could choose one, two or three interest areas to pursue concurrently or consecutively. These investigations might include both highly specialized art areas and topics which would cut across departmental boundaries. For example, studies in the technical aspects of ceramics or color or sculpture could lead the student toward chemistry, psychology or history. Painting, depending on interest in styles, could lead to poetry, mathematics, iconography, history and anatomy.

c. Consulting professor and one other visual arts instructor. Professors from other departments are also invited if a topic demands more precise information.

d. This could also relate art history to the specific topics of investigation the students are currently pursuing.

C. *Theater*

1. Studio—Student chooses one of the following areas:

a. Acting and Directing

(1) Group - Skill in the use of voice and body. Coordinators: Speech and dance staffs.

(2) Group - Inner technique: Improvisations, theater games, mime, sensory and emotional exercises. Coordinators: Theater staff.

(3) Individual or group - individual projects in characterization. Group work on current major or student-directed workshop productions.

b. Designing

(1) Individual projects in the visual arts or architecture. Instructors in art and architecture serve as mentors in guiding the student in his project.

(2) Individual projects in theater design. The student and his consulting professor work out individual and group projects in theater design, correlating these with the student's art and/or projects.

c. Writing

(1) Individual writing projects under the guidance of theater staff and consultants. This project might be geared to workshop productions.

(2) Group discussions and criticism of student's manuscripts. Coordinators: Theater staff and consultants.

2. Studies in dramatic literature

Group and individual programs of reading and research determined by each student's interest and coordinated with his work in acting, directing, writing or design. Coordinators: Theater staff and visiting professors.

3. Colloquium

Theater is the context of selected historical periods-readings, discussions, lectures, research. Coordinators: Theater staff and visiting professors.

D. *Service functions for the non-creative-arts major*

Since the program is concerned with the self-thrust of the individual student in the process of discovery in preference to exposure to a body of selected materials, the opportunity

for involvement of the non-creative-arts major is greater. The non-major will be free to proceed into the program under various seminars open to both Creative Arts and non-creative-arts majors. The non-major will register for the courses CA-071 (Instrumental Music) and/or CA-081 (Chorus) for one hour credit; CA-211A, 211M, 211T for one hour credit; CA-212A, 212M, 212T for two hours credit; and CA-213A, 213-M, 213T for three hours credit. Students enrolling in these sections will receive a grade according to the University-wide grading system. Beyond the initial seminar, the philosophy of work in the Creative Arts will be based on the same principles as those for the Creative Arts major.

III. *Third and fourth years*

A. *Assignment of Creative Arts Adviser*

1. The student and his major adviser plan specific projects in the student's area of major concern, e.g., violin, painting, directing and education in the arts.

   It is important, however, that the planning of such projects will assist the student to an ever greater awareness of his need to move from the specific to the general.

2. The student's third and fourth years of study operate largely on a contractual basis. Therefore, time allocations and project pursuits are more flexible from semester to semester.

B. *Seminar/Workshops*

1. Seminar/workshop offerings could be changed, expanded, etc., to meet the needs and interests of the students. Seminar/workshops are for all Creative Arts students.

2. Seminar topics would deal not only with the arts but also with more general and interrelated issues concerning the human condition.

3. Examples of seminar/workshop topics:

   a. Aural, kinetic and visual environment—past, present, future.

   b. Professional—problems of interviewing, procedures of job-seeking, publication, exhibitions, performances, etc.

   c. Selected topics in painting, sculpture, counterpoint, playwriting, orchestration, fiction, etc.

d. Selected topics in aesthetics.

e. Arts in urban life.

f. Abstraction, e.g., mathematical formulae, logos, musical and dance notation, etc.

g. Selected topics in arts education, e.g., music education for elementary teachers, art education for elementary and/or secondary teachers.

C. *Music*

1. Area of major concern.

2. Area of secondary concern.

D. *Visual Arts*

1. Area of major concern.

2. Area of secondary concern.

3. Coordinating seminar.

a. Written and oral work.

b. Discussion of work in progress.

c. Taken usually in last year of program.

d. Selected topics (general)—visual arts and other fields.

e. Coordinators - two or three visual arts instructors.

E. *Theater*

The third and fourth years in Theater are centered around eight major productions. A student contracts to work in his area of major concern on at least five of these productions and in his area of secondary concern on the remaining three.

The Department of Creative Arts wishes to make available to the non-BCA student activities and involvement in the arts. Those students wishing to avail themselves of the broad opportunities for study possible in the Creative Arts may register for the following courses in directed projects involving art, dance, music or theater: - 211, 212 and 213.

The last digit in the course number code indicates the credit hours. The letter code indicates the area of discipline (A, D, M or T) i.e. 213M signifies a three-credit hour course in music.

Directed Projects

Directed Projects are not classes. They are learning programs designed for and by individual students who wish to pursue study in the Department of Creative Arts, e.g. Music, Art, Theater, Creative Writing, Dance or any combination.

Any regularly enrolled UNCC student other than BCA majors may elect Directed Projects and, subject to the approval of an adviser develop a project which focuses upon the student's unique interst and abilities.

A project may take the form of research, studio lessons, the study of music literature, ceramics, sculpture, painting, writing or countless other forms of the student's devising.

Directed Projects may be elected for one, two or three hours credit or a maximum of six hours in any one semester.

Students electing Directed Projects will need to see the assigned adviser at the first meeting, as designated on the schedule.

Ensemble

MUS 071. (1) Instrumental Ensemble. May be repeated for credit. Credit limited to one semester hour per semester. Prerequisite: consent of instructor.

MUS 081A, 081B. (1) Chorus. May be repeated for credit. Credit limited to one semester hour per semester.

DEPARTMENT OF ENGLISH

Chairman: Professor Burne
Professors: Ellis, Mason, McCall, Moose, Denny (Emeritus), Wallace (Emeritus)
Associate Professors: Bryan, Carver, Gatlin, Shapiro, Varnas
Assistant Professors: Brashear, Davis, Grey, Harper, Hedges, McGavran, Meyer, Petrakis, Watson
Instructors: Amante, Bowen, Horton, Newman, Pierce, Robinson, Selden, Stone
Lecturers (part-time): Blount, Hunter

A major in English leading to the B.A. degree (except for students in the early childhood teacher certification program) consists of 30 semester hours of course work above the 100 level. All English majors must take English 101 and 102 (unless exempted). Course requirements at the 200 level shall consist of a minimum of six hours taken from among the following courses: 201, 202, 203, 207, 211, 212. A maximum of 12 hours from among these courses may count towards the English major. Prerequisites for 200-level courses are English 101 and 102 or

the equivalent; 102 may be taken concurrently with a 200-level course with the consent of the department. Requirements above the 200-level are as follows: (a) one American literature course; (b) one British literature course, pre-1800; (c) one British literature course, post-1800 (including the Romantic period course). Prerequisite for all 300- and 400-level courses is at least one course at the 200 level.

The above requirements apply to the regular English major and to those students seeking teacher certification on the secondary level. Students in the secondary certification program are required to take six hours in English language or composition beyond 101-102 and consult with the College of Human Development and Learning regarding other courses required for certification.

A major in English for students in the early childhood teacher certification program consists of 24 semester hours of English courses (plus English 303) numbered 200 or above, including a minimum of six hours at the 200-level (6); English 332 (3)*; one British literature course, pre-1800 (3); one British literature course, Post-1800 (including English 325) (3); one American literature course (3); and six additional hours of courses within the department numbered 300 or above. Outside the department students must complete all requirements for the early childhood certificates (K-3 or Intermediate).

COURSE DESCRIPTIONS

ENGLISH

ENG 099. ENGLISH AS A FOREIGN LANGUAGE. (no credit) Limited to students whose native language is not English who may need additional preparation for their regular academic work, including composition courses.

ENG 101-102. ENGLISH COMPOSITION. (6) Introductory readings in varieties of literature and intensive practice in critical and expository writing. (NOTE: To complete the general degree requirement of six hours of English, a student should take 101 (3), and three of the one-hour five-week courses numbered 102. English 101 is prerequisite to 102.)

ENG 201. ENGLISH LITERATURE. (3) Prerequisites: ENG 101 and 102. Intensive study of the masterpieces of British literature in chronological sequence before 1800.

ENG 202. ENGLISH LITERATURE. (3) Prerequisites: ENG 101 and 102. British literary masterpieces since 1800.

ENG 203. MASTERPIECES OF MODERN FICTION. (3) Prerequisites: ENG 101 and 102. Readings in selected novels and short stories written since 1850.

*Students beginning the Human Development and Learning sequence in the fall of 1971 and later may substitute English 461 for English 332 at the discretion of the department.

ENG 204. MAJOR AMERICAN WRITERS. (3) Prerequisites: ENG 101 and 102. Extensive readings in six to eight authors. Recommended for non-English majors who are working for teachers certificates. Does not count toward an English major.

ENG 206. DRAMA IN THE MODERN WORLD. (3) Prerequisites: ENG 101 and 102. An introductory course in the appreciation of drama, including film, and involving study of structure, theme and character. Does not count toward an English major.

ENG 207. CRITICAL APPROACHES TO LITERATURE. (3) Prerequisites: ENG 101 and 102. An introductory study of critical methods, such as mythological, psychological and existential and practice in analyzing and evaluating literature. Limited to English majors and those having the permission of the department.

ENG 211. MASTERPIECES OF WORLD LITERATURE I. (3) Readings in Greek, Latin and Eastern works in translation.

ENG 212. MASTERPIECES OF WORLD LITERATURE II. (3) Readings in Medieval, Renaissance and Modern European literature in translation.

NOTE: Prerequisites for 300 or 400 level courses: three semester hours of English on the 200 level, unless otherwise specified.

ENG 301. GREEK AND ROMAN DRAMA IN TRANSLATION. (3) A study of selected plays of Aeschylus, Sophocles, Euripides, Plautus, Terence and Seneca with emphasis on dramaturgy and the development of the Greek and Roman theater.

ENG 303. CHILDREN'S LITERATURE. (3) Critical study of representative reading materials and approaches to literature appropriate for elementary school children. Does not count toward an English major.

ENG 305. ADVANCED COMPOSITION. (3) The writing of essays, criticisms and various forms of exposition.

ENG 306. INTRODUCTORY CREATIVE WRITING. (3) Prerequisite: permission of the instructor. Open to students of at least sophomore standing who have satisfied the requirement of ENG 101 and 102. Writing of fiction, poetry or drama.

ENG 313. MILTON. (3) The major poems and selections from the minor works.

ENG 316. SHAKESPEARE'S EARLY PLAYS. (3) A study of 10 representative plays from the Comedies, Histories and Tragedies written between 1590-1600.

ENG 317. SHAKESPEARE'S LATE PLAYS. (3) A study of 10 representative plays from the period 1600-1611, including the late Tragedies and Tragi-comedies.

ENG 323. ENGLISH LITERATURE, 1660-1785. (3) Poetry and prose from Dryden through Johnson; collateral readings in drama and the novel.

ENG 325. THE ROMANTIC ERA, 1785-1832. (3) The development of the Romantic movement with emphasis on the works of Wordsworth, Coleridge and other major poets.

ENG 326. THE VICTORIAN ERA TO 1870. (3) Emphasis on Tennyson, Browning, Arnold, Carlyle, Ruskin and Newman.

ENG 327. ENGLISH LITERATURE FROM 1970-1914. (3) British literature from Walter Pater to the 1st World War.

ENG 332. INTRODUCTION TO MODERN ENGLISH.* (3) An introduction to the phonology and grammatical structure of present-day English, with some consideration of word formation, changes in meaning, dialectal differences and problems of usage.

ENG 341. AMERICAN LITERATURE, 1820-1890. (3) The chief writers and literary movements from Irving through Whitman.

ENG 342. AMERICAN LITERATURE SINCE 1890. (3) The chief writers and movements from Howells to the present.

ENG 347. EARLY BLACK AMERICAN LITERATURE. (3) A survey of significant writings by black Americans before the Harlem Renaissance.

ENG 348. TWENTIETH CENTURY BLACK AMERICAN LITERATURE: PROSE. (3) An intensive study of selected black American twentieth century writers of fiction and non-fiction, beginning with the Harlem Renaissance.

ENG 349. TWENTIETH CENTURY BLACK AMERICAN LITERATURE: POETRY AND DRAMA. (3) An intensive study of selected black American twentieth century writers of poetry and drama beginning with the Harlem Renaissance and the Black Arts Movement and including the Black Arts Movement.

ENG 350. TOPICS IN ENGLISH. (3) May be repeated for additional credit with approval of the department. Prerequisite: consent of the department. This course is designed to offer special topics not included in other courses.

ENG 351. LITERARY CRITICISM THROUGH ARNOLD. (3) The major schools and critics.

*Students beginning the Human Development and Learning sequence in the fall of 1971 and later may substitute English 461 for English 332 at the discretion of the department.

ENG 352. INDEPENDENT STUDY. (1 to 3 semester hours credit.) May be repeated for additional credit with approval of the department. Prerequisite: consent of the department. Individual investigations and appropriate exposition of the results.

ENG 405. ADVANCED CREATIVE WRITING. (3) Prerequisite: ENG 306 and permission of the instructor. May be repeated for credit with the consent of the department. One weekly seminar and individual tutorials.

ENG 412. ENGLISH LITERATURE FROM THE BEGINNINGS TO 1500. (3) A systematic survey of English literature from the beginning to the end of the 15th century, excluding Chaucer. All the works studied in this course will be in translation.

Courses for Advanced Undergraduates

ENG 311. CHAUCER. (3) *The Canterbury Tales, Troilus and Criseyde,* and selected minor works.

ENG 321. THE EARLIER SEVENTEENTH CENTURY. (3) Major writers from Bacon and Donne to the Restoration.

ENG 331. HISTORY OF THE ENGLISH LANGUAGE. (3) Origins and development of the English language and its present usage.

ENG 343. THE AMERICAN NOVEL OF THE NINETEENTH CENTURY. (3) Major novelists and traditions from the beginnings of the American novel through the rise of realism, with primary attention to approximately eight or 10 representative novels.

ENG 344. THE AMERICAN NOVEL OF THE TWENTIETH CENTURY. (3) Major novelists and traditions from the emergence of naturalism to the present, with primary attention to approximately eight or 10 representative novels.

ENG 401. MODERN LITERARY CRITICISM. (3) Critical theories of the modern schools.

ENG 413. ENGLISH PROSE AND POETRY OF THE SIXTEENTH CENTURY. (3) The major works, excluding drama, More through Spenser, with attention to the development of the lyric.

ENG 421. THE ENGLISH NOVEL BEFORE SCOTT. (3) Major writers and traditions, Defoe through Jane Austen.

ENG 422. THE NOVEL FROM SCOTT THROUGH THE VICTORIANS. (3) Major writers and traditions through Hardy.

ENG 423. THE MODERN BRITISH NOVEL. (3) Representative British novels showing the philosophies and techniques affecting British fiction, from Hardy to the present.

ENG 431. ENGLISH DRAMA TO 1600, EXCLUDING SHAKESPEARE. (3) A survey of the development of English drama to 1600, with representative plays from the Mystery-Miracle Cycles, the Morality Plays and Tudor drama, including Lyly, Kyd, Marlowe, Peele, Greene and Dekker.

ENG 432. ENGLISH DRAMA FROM 1600 to 1642, EXCLUDING SHAKESPEARE. (3) A survey of Jacobean and Caroline drama, including plays by Jonson, Beaumont and Fletcher, Webster, Middleton, Shirley and Ford.

ENG 441. COLONIAL AND EARLY AMERICAN LITERATURE. (3) American literature from Colonial times through Washington Irving.

ENG 450. MODERN POETRY. (3) Chief British and American poets of this century.

ENG 451. MODERN DRAMA. (3) Representative British and American plays from Shaw to the present.

ENG 455. INTRODUCTION TO PAN-AFRICAN LITERATURE. (3) May be repeated for additional credit with approval of the department, as the geographical emphasis varies. A survey of significant Pan-African literature (Caribbean, West African, East African, etc.) emphasizing both the oral tradition and works of contemporary authors.

ENG 461. MODERN ENGLISH GRAMMAR. (3) Prerequisite: ENG 331 or 332. A descriptive analysis of the structure of Modern English, with emphasis upon the transformational approach.

ENG 465. SOCIAL DIALECTS. (3) An introduction to concepts of dialects, predominately in the United States, concentrating on social and class differentiations, and incorporating some field-work experience within an interdisciplinary approach. Morphological, phonological and syntactic systems will be emphasized. Prerequisite: ENG 332 or 461.

DEPARTMENT OF FOREIGN LANGUAGES

Chairman: Professor Gabriel
Professors: Bush, Saman, Slechta, Turner
Associate Professor: Gleaves
Assistant Professors: Cernyak, Gonzales-Quevedo, Hopper, McLeod, Merrill, Reimer, Rose
Instructors: Park, Vance

Programs in each of the several foreign languages offered are designed to give a student competence in four skills—understanding, speaking, reading and writing the given language, to acquaint him with the culture and civilization of the country or countries where that

language is spoken, especially their literature, and to give him some understanding of the people who speak it. Major programs include advanced linguistic analysis of sound systems and structure and are designed to prepare students for certification by the North Carolina State Department of Public Instruction or graduate work in the major field. Courses above the 202 level are normally taught in the foreign language.

Placement

The Department of Foreign Languages will recommend the placement of a student in a class of a level commensurate with his demonstrated competence at the time of enrollment considered together with his prior language training or experience.

Honors in Modern Languages

The honors program in foreign languages is open both to majors and non-majors who have demonstrated sufficient ability and interest to be capable of guided independent study outside the restrictions of regular course work. Reading for honors in a foreign language may begin as early as the second semester of a first-year course (102), providing the student has been enrolled at the University for at least one semester. Honors students who attain the language proficiency required for the 202 level may choose to read either in the literature or in the civilization of the target culture. Whenever feasible, arrangements are made for non-majors to read in the area of their special interest in cooperation with the department of their major.

Students are invited to enter honors work by recommendation of a member of the department to the Honors Committee for the language concerned. Once accepted for honors work within the department, a student must submit any proposal for a special honors project at least eight weeks prior to the semester in which the work is to be done. A student may drop honors work at any time without penalty (See *University Honors Program*). However, he will not be permitted to re-enter the program until the following semester and, in any case, not without review and approval by the Honors Committee.

Laboratory

All foreign language courses at the 100 and 200 level, as well as those numbered 301 to 302, meet for three class hours and one to two hours of laboratory work per week. Whenever warranted, laboratory work may be assigned by the instructor in other courses.

SUGGESTED CURRICULUM LEADING TO A BACHELOR OF ARTS DEGREE IN A FOREIGN LANGUAGE

FRESHMAN YEAR

English 101	3	English 102	3
History 101	3	Mathematics Elective	3
Foreign Language 201	4	History 102	3
Elective	6	Foreign Language 202	4
	—	Elective	3
	16		—
			16

SOPHOMORE YEAR

Foreign Language 301	3	Foreign Language 302	3
Literature Elective	3	Foreign Language 304	3
Science with lab	4	Science with lab	4
Social Science Elective	3	Math or Logic Elective	3
	—	Elective	3
	13		—
			16

JUNIOR YEAR

Foreign Language 303	3	Foreign Language 4xx	3
Foreign Language 331	3	Literature Elective	3
Creative Arts Elective	3	Philosophy or Comparative Religions	3
Social Science Elective	3		
Elective	3	Elective	3
	—	Elective	3
	15		—
			15

SENIOR YEAR

Foreign Language 4xx	3	Foreign Language 49x	3
Foreign Language 4xx	3	Creative Arts Elective	3
Foreign Language 309	3	Elective	3
Elective	3	Elective	3
Elective	3	Elective	3
	—		—
	15		15

SUGGESTED CURRICULUM LEADING TO A BACHELOR OF ARTS DEGREE IN A FOREIGN LANGUAGE, WITH CERTIFICATION IN SECONDARY SCHOOL TEACHING

FRESHMAN YEAR

English 101	3	English 102	3
History 101	3	Mathematics 101 (103)	3

Foreign Language 201	4	History 102	3
Elective	6	Foreign Language 202	4
	—	Elective	3
	16		—
			16

SOPHOMORE YEAR

English 201	3	English 202 (203,204)	3
Foreign Language 301	3	Foreign Language 302	3
Education 201	3	Foreign Language 304	3
Social Science (1)	3	Mathematics or Logic	3
A Physical Science	4	A Biological Science	4
	—		—
	16		16

JUNIOR YEAR

Foreign Language 303	3	Foreign Language 4xx	3
Foreign Language 331	3	Foreign Language 4xx	3
Psychology 201	4	Creative Arts Elective	3
Social Science (1)	3	Psychology 202	3
Health Education 101	1	Foreign Languages 300	3
Elective	3		—
	—		15
	17		

SENIOR YEAR

Foreign Language 4xx	3	Education 304	3
Philosophy or		Psychology 302	3
Comparative Religions	3	Education 402	3
Foreign Language 309	3	Education 451	6
Foreign Language 49x	3		—
Creative Arts Elective	3		15
Physical Education 101	1		
	—		
	16		

FL 300. METHODS OF TEACHING A FOREIGN LANGUAGE. (2) Prerequisite: junior standing or permission of department. An investigation into current trends and practices of foreign language teaching with special emphasis on practical applications. Readings, discussion, micro-teaching and observation of classroom situations at all levels. Required of all students seeking certification in the teaching of a foreign language

FRENCH

A major in French leading to the B.A. degree consists of French 201, 202, 301, 302, 303, 304, 309 and 331 and at least 12 hours on the 400 level, including 491. Related work is to be approved by the department and is indicated in the Suggested Curriculum on page 178-179.

(1) Social Science options for Secondary Education candidates are: Anthropology, Political Science, Science, Sociology, Economics and Geography.

FRENCH

FRE 101. ELEMENTARY FRENCH. (4) Fundamentals of French grammar and phonetics, reading, writing and conversation. Three class hours and two hours of laboratory work per week.

FRE 102. ELEMENTARY FRENCH. (4) Prerequisite: FRE 101 or permission of the department. Continuation of FRE 101. Three class hours and two hours of laboratory work per week.

FRE 201. INTERMEDIATE FRENCH. (4) Prerequisite: FRE 102, or permission of the department. Review grammar, with composition and conversation based upon readings on French culture and civilization. Three class hours and two hours of laboratory work per week.

FRE 202. INTERMEDIATE FRENCH. (4) Prerequisite: FRE 201 or permission of the department. Review grammar, composition, and conversation, based upon readings in French prose and poetry. Three class hours and two hours of laboratory work per week.

FRE 209. FRENCH CIVILIZATION. (3) Conducted in English. No knowledge of French required. Open to majors or non-majors for elective credit. A study of the French people, past and present, with emphasis on cross-cultural contrasts in attitudes and values.

FRE 301. ADVANCED FRENCH GRAMMAR, COMPOSITION AND CONVERSATION I. (3) Prerequisite: FRE 202 or permission of the department. For prospective teachers of French and students who want intensive oral and written work in the language. Book reports on collateral readings.

FRE 302. ADVANCED FRENCH GRAMMAR, COMPOSITION AND CONVERSATION II. (3) Prerequisite: FRE 202 or permission of the department. Informal conversation on diversified prepared topics, newspaper and magazine articles. Students will be given maximum opportunity for self-expression. Book reports on collateral readings.

FRE 303. INTRODUCTION TO THE STUDY OF FRENCH LITERATURE. (3) Prerequisites: FRE 202 or permission of the department. Study of major works of French literature with emphasis on in-depth analyses of individual authors, works and related movements. Readings, discussions, presentations and *explications de texte.*

FRE 304. SURVEY OF FRENCH LITERATURE SINCE 1800. (3) Prerequisite: FRE 301 or FRE 202 and permission of the instructor. Continuation of FRE 303. Book reports on collateral readings.

FRE 309. FRENCH CIVILIZATION. (3) Prerequisite: FRE 202 or permission of the department. A study of the French people, past and present. Special attention to cross-cultural contrasts in attitudes and values. Conducted in French.

FRE 331. FRENCH PHONETICS. (3) Prerequisite: FRE 202 or permission of the department. Study of the sounds of the French language, their production and their representation by means of the International Phonetic Alphabet. Practice in reading and speaking with proper rhythm and intonation. Three class hours and two hours of laboratory work per week. (May be repeated for credit with permission of the department.)

FRE 350. SELECTED TOPICS IN FRENCH. (3) Prerequisite: junior standing and consent of the department. Credit may be repeated.

FRE 401. FRENCH LITERATURE OF THE TWENTIETH CENTURY. (3) Prerequisites: FRE 303 and 304 or permission of the department. Concentration on the principal authors and movements of the contemporary period. Collateral readings.

FRE 403. FRENCH LITERATURE OF THE NINETEENTH CENTURY. (3) Prerequisites: FRE 303 and 304 or permission of the department. Concentration on the sources of nineteenth century literary ideas, the principal literary movements and the principal poets, dramatists, novelists and critics.

FRE 405. THE AGE OF ENLIGHTENMENT. (3) Prerequisite: FRE 303 or permission of the department. Major emphasis on "les philosophes," especially Montesquieu, Voltaire, Diderot and Rousseau.

FRE 408. THE SEVENTEENTH CENTURY. (3) Prerequisite: FRE 303 or permission of the department. Study of Pre-Classical and Classical trends in seventeenth century French literature. Emphasis on the work of major writers of the period: Descartes, Pascal, Corneille, Moliere, Racine, La Fontaine, Boileau and Mme. de Lafayette. Outside readings and reports.

FRE 411. FRENCH-AFRICAN LITERATURE. (3) Prerequisite: FRE 302 or permission of the department. Study of French-African literature from the colonial period through the contemporary period. Course conducted in French.

FRE 416. FRENCH LITERATURE OF THE MIDDLE AGES AND THE RENAISSANCE. (3) Prerequisites: FRE 303 or permission of the department. Study of French literature from *La Chanson de Roland* to the beginning of the seventeenth century. Selections chosen to illustrate characteristics, genres and works of major writers of the period. Outside readings and reports.

FRE 450. SPECIAL TOPICS IN FRENCH. (3) Prerequisite: two 300 courses or permission of the instructor. Treatment in depth of a special subject group or figure in French literature or French culture. May be repeated for credit with change of topic.

FRE 491. SENIOR COLLOQUIM. (3) Prerequisite: senior standing and permission of the department. Special problems in the major field. Collateral readings and term papers. FRE 491 is required of all French majors.

GERMAN

A major in German consists of German 201, 202, 301 or 302, 309, 311, 403 or 404, 410, 420 and 491 plus three additional hours on the 300 or 400-level, or a total of 32 hours. In addition, 15 hours of related work, to be approved by the department chairman, will be required. Candidates for teacher certification must also take GER 331, making a total of 35 hours of work in the Foreign Languages Department required.

COURSE DESCRIPTIONS

GERMAN

GER 101. ELEMENTARY GERMAN. (4) Fundamentals of German grammar and phonetics, reading and conversation. Three class hours and two hours of laboratory work per week.

GER 102. ELEMENTARY GERMAN. (4) Prerequisite: GER 101 or permission of the department. Continuation of GER 101. Three class hours and two hours of laboratory work per week.

GER 201. INTERMEDIATE GERMAN. (4) Prerequisite: GER 102 or permission of the department. Review grammar, composition and conversation, based upon readings on the culture and civilization of German-speaking countries. Three class hours and two hours of laboratory work per week.

GER 202. INTERMEDIATE GERMAN. (4) Prerequisite: GER 201 or permission of the department. Continuation of GER 201. Review grammar, composition and conversation, based upon readings in German prose. Three class hours and two hours of laboratory work per week. Students who wish to continue with advanced offerings in German are advised to select GER 202.

GER 203. TECHNICAL GERMAN. (4) Prerequisite: GER 201. Readings and translations of German publications in the students' major field or area of concentration. Not open to German majors.

GER 301. ADVANCED GERMAN GRAMMAR, COMPOSITION AND CONVERSATION I. (3) Prerequisite: GER 202 or permission of the department. For prospective teachers of German and students who want intensive oral and written work in the language. Book reports on collateral readings. Three class hours and two hours of laboratory work per week.

GER 302. ADVANCED GERMAN GRAMMAR AND COMPOSITION II. (3) Prerequisite: GER 202 or permission of the department. Intensive review of German grammar. Discussion of prepared topics drawn from readings. Book reports on readings. Three class hours per week and laboratory work as assigned by instructor.

GER 309. GERMAN CIVILIZATION. (3) Prerequisite: GER 202 or permission of the department. Composition and conversation based on readings in the culture, civilization, art and literature of German speaking countries.

GER 311. TOPICS IN GERMAN LITERATURE (1-3) Prerequisite: GER 202 or permission of the department. Book reports and discussions on collateral readings. Changing topic: a) Short prose fiction, b) The radio play, c) Folk music and folk literature, d) Methods in the study of literature, 3) Structures of Modern Standard German, f) Twentieth Century Germany as reflected in literature. May be repeated as topic changes.

GER 331. GERMAN PHONETICS. (3) Prerequisite: GER 202 or permission of the department. Study of the sounds of the German language, their production and their representation by means of the International Phonetic Alphabet. Practice in reading and speaking with proper rhythm and intonation. Three class hours and two hours of laboratory work per week. Transcription exercises and student recordings.

GER 360. GERMAN LITERATURE IN TRANSLATION. (3) For non-majors. Prerequisite: sophomore standing. May be taken for elective credit by German majors. Reading and discussions of selective works of German literature of topical interest to the student.

GER 403. SURVEY OF GERMAN LITERATURE. (3) Prerequisites: two 300 level courses (not 360) or permission of the department. General introduction to German literature from the Middle Ages to the Classical Period. Book reports and class discussion on collateral readings.

GER 404. SURVEY OF GERMAN l ITERATURE. (3) Prerequisite: two 300 level courses (not 360) or permission of department. German literature since Classicism. Book reports and discussion on collateral readings.

GER 410. PERIODS IN THE HISTORY OF GERMAN LITERATURE: (3) (a) Medieval literature (b) Classicism (c) Romanticism (d) Contemporary Literature. Prerequisite: two 300 level courses (not 360) or permission of the department. Study of the major writers and works in a given period. Readings, lectures and reports. May be repeated for major credit as topic changes.

GER 420. THE CHIEF GENRES IN GERMAN LITERATURE (3) (a) The novel (b) The drama (c) Lyric poetry. Prerequisite: two 300 level courses (not 360) or permission of the department. An analysis of a major genre and its development within German literary history. May be repeated for major credit as topic changes. Readings, lectures and reports.

GER 491. SENIOR COLLOQUIUM. (3) Prerequisites: senior standing and permission of the department. Comprehensive review of the major field. Lectures, discussions, and reports.

RUSSIAN

RUS 101. ELEMENTARY RUSSIAN. (4) Fundamentals of Russian grammar, with particular stress on correct pronunciation and self expression, through practice in the language laboratory. Three class hours and two laboratory periods a week.

RUS 102. ELEMENTARY RUSSIAN. (4) Prerequisite: RUS 101. Continuation of RUS 101. Graded readings. Three class hours and two laboratory periods a week.

RUS 201. INTERMEDIATE RUSSIAN. (4) Prerequisite: RUS 102 or permission of the department. Review grammar, with conversation and composition based upon readings in Russian culture and civilization. Three class hours and two hours of laboratory work per week.

RUS 202. INTERMEDIATE RUSSIAN. (4) Prerequisite: RUS 201 or permission of the department. Continuation of grammar, conversation and composition skills, based on readings in Russian literature. Three class hours and two hours of laboratory work per week.

RUS 495. SEMINAR IN SLAVIC LINGUISTICS. (2) Study of morphology semantics, phonology and general grammar of Russian and other Slavic languages—Bulgarian, Czech, Polish, Serbo-Croatian, Slovak and Ukranian. Class meeting once a week for two hours. Prerequisite: RUS 102 or the permission of the department.

SPANISH

A major in Spanish leading to the B.A. degree consists of Spanish 201, 202, 301, 302, 303, 304, 309 or 310, and 12 hours of Spanish courses on the 400 level, including Spanish 491. Spanish 311 or 312 may be substituted for 304.

Students who plan to teach in secondary schools must also take Spanish 331. Related work is to be approved by the department.

COURSE DESCRIPTIONS

SPANISH

SPA 101. ELEMENTARY SPANISH. (4) Introduction to Spanish with emphasis on auditory comprehension, oral production and control of structure. Three hours of class and two hours of laboratory per week.

SPA 102. ELEMENTARY SPANISH. (4) Continuation of SPA 101, with greater attention to reading and writing. Three hours of class and two hours laboratory per week.

SPA 201. INTERMEDIATE SPANISH. (4) Prerequisite: SPA 102 or permission of department. Reinforcement and expansion of skill mastery developed in elementary courses on basis of grammar review and conversation. Three hours of class and two hours laboratory per week.

SPA 202. INTERMEDIATE SPANISH. (4) Prerequisite: SPA 201 or permission of department. Continuation of Spanish 201. Extensive pracice in oral and written control of the language on basis of readings from Spanish or Spanish-American literature. Three hours of class and two hours of laboratory per week.

SPA 209. LITERATURE OF THE HISPANIC WORLD IN TRANSLATION. (3) Prerequisite: none. Studies of Spanish or Spanish American literature in translation. Not available to Spanish majors for credit toward major but may be taken for elective credit. May be repeated for credit. Course conducted in English.

SPA 301. ADVANCED GRAMMAR AND COMPOSITION. (3) Prerequisite: SPA 202 or permission of the department. For prospective teachers of Spanish and students who want intensive oral and written work in the language. Both written and oral composition. Reports on collateral reading. Three hours of class and two hours laboratory per week. Course conducted in Spanish.

SPA 302. ADVANCED CONVERSATION AND COMPOSITION. (3) Prerequisite: SPA 202 or permission of department. Advanced structural analysis and oral and written composition. Reports of collateral readings. Three hours of class and two hours laboratory per week. Course conducted in Spanish.

SPA 303. INTRODUCTION TO SPANISH LITERATURE I. (3) Prerequisite: SPA 202 or permission of department. Reading and analysis of representative master works of Spanish literature from its origins through the Golden Age. Course conducted in Spanish.

SPA 304. INTRODUCTION TO SPANISH LITERATURE II. (3) Prerequisite: SPA 202 or permission of department. Continuation of SPA 303 with emphasis on literature of the nineteenth and twentieth centuries. Course conducted in Spanish.

SPA 309. SPANISH CIVILIZATION AND CULTURE. (3) Prerequisite: SPA 202 or permission of department. An overview of the cultural heritage of peninsular Spain. Lecture, discussion, recitation on basis of assigned readings. Course conducted in Spanish.

SPA 310. SPANISH AMERICAN CIVILIZATION AND CULTURE. (3) Prerequisite: SPA 202 or permission of department. An introduction to the cultural heritage of the Spanish American countries. Lecture, discussion, recitation on the basis of assigned readings. Course conducted in Spanish.

SPA 311. SPANISH AMERICAN LITERATURE I. (3) Prerequisite: SPA 202 or permission of the department. Survey of Spanish American literature from the Colonial period through Romanticism. Lectures, discussion and reports on the basis of assigned readings. Course conducted in Spanish.

SPA 312. SPANISH AMERICAN LITERATURE II. (3) Prerequisite: SPA 202 or permission of the department. Survey of Spanish American literature from Modernism through the contemporary period. Lectures, discussions and reports on the basis of assigned readings. Course conducted in Spanish.

SPA 331. SPANISH PHONETICS. (3) Prerequisite: SPA 202 or permission of department. Detailed analysis of description and production of Spanish sounds. Practical exercises to include phonetic transcription and recordings. Two hours of class and two hours of laboratory a week.

SPA 350. SELECTED TOPICS IN SPANISH. (3) Prerequisite: junior standing or consent of the department. Credit may be repeated.

SPA 401. NINETEENTH CENTURY SPANISH LITERATURE. (3) Prerequisite: two 300 level courses or permission of the department. Survey of peninsular literature from Costumbrismo through the Generation of 1898. Lectures, discussions and reports on basis of extensive collateral reading. Course conducted in Spanish.

SPA 402. TWENTIETH-CENTURY SPANISH LITERATURE. (3) Prerequisite: two 300 level courses or permission of department. Treatment of major literary developments from the Generation of 1898 to the present day. Lectures, discussions and reports on the basis of extensive collateral readings. Course conducted in Spanish.

SPA 405. THE GOLDEN AGE OF SPANISH LITERATURE I. (3) Prerequisite: two 300 level courses or permission of department. El Lazarillo through El Criticon. Lecture, discussion and reports on basis of extensive collateral reading. Course conducted in Spanish.

SPA 406. THE GOLDEN AGE OF SPANISH LITERATURE II. (3) Prerequisite: two 300 level courses or permission of department. Study of works of the leading dramatists of the period. Lectures, discussions and reports on basis of extensive collateral readings. Course conducted in Spanish.

SPA 411. STUDIES IN SPANISH AMERICAN PROSE FICTION. (3) Prerequisite: two 300 level courses or permission of the department. Studies of nineteenth and twentieth century Spanish American prose fiction. Course conducted in Spanish.

SPA 412. STUDIES IN SPANISH AMERICAN POETRY AND DRAMA. (3) Prerequisite: two 300 level courses or permission of the department. Studies of nineteenth and twentieth century Spanish American drama and/or poetry. Course conducted in Spanish.

SPA 413. DON QUIJOTE. (3) Prerequisite: two 300 level Spanish courses or permission of the department. In-depth study of Cervantes' masterpiece, which is considered by many critics to be the basis of the modern Western novel. Course conducted in Spanish.

SPA 450. SELECTED READINGS IN SPANISH. (3) Prerequisite: two 300 level courses or permission of the department. Consideration in depth of a predetermined author or literary movement. Course conducted in Spanish.

SPA 491. SENIOR COLLOQUIUM. (3) Prerequisite: senior standing and permission of the department. Comprehensive review of the major field.

DEPARTMENT OF HISTORY

Chairman: Professor Rieke
Professors: Abernathy, Hall,* Wrigley
Associate Professors: Davis, Josephson, Morrill, Perzel, Ploger
Assistant Professors: Dunkley, Escott, Johnson, Monkkonen, Patterson
Instructor: Farlowe
Lecturers: Gay, (Part-time) Frech, Kirchner

A major in history leading to the B.A. degree, except for students in the elementary certification program, consists of 30 semester hours of history, including (but not exceeding) 12 semester hours at the 100 level. Related work consists of 15 semester hours in one discipline.

A major in history leading to the B.A. degree for students in the elementary certification program consists of 27 semester hours; 12 semester hours at the 100 level (with three semester hours of United States History 103 or 104 required) and at least 15 semester hours beyond the 100 level. Related work consists of semester hours as outlined in the degree requirements of the elementary certification program.

Certification in history (Secondary School Teaching) is made possible by satisfactory completion of a major.

Students majoring in history who plan to be certified in both history and social studies (Secondary School Teaching), must complete in addition to their requirements for a history major (including American and world history), 21 semester hours in three or more of the following disciplines: anthropology, economics, geography, political science, sociology. Fifteen semester hours in one of these disciplines may be counted for related work.

Curricula for teaching candidates must also be approved by the College of Human Development and Learning.

*On Leave Fall, 1974

The Honors Program in History

The History Department offers an honors program as well as individual honors courses. Both history majors and non-majors are welcome to participate. A brochure fully outlining the honors program is available in the history office. Study abroad in Asia, Africa, Europe, Latin America or Canada can be arranged.

COURSE DESCRIPTIONS

HISTORY

HIS 101. MODERN WESTERN CIVILIZATION TO 1815. (3) This course commences with a broad survey of Ancient and Medieval contributions to Modern Western Civilization and then treats intensively the development of Western Civilization from the Renaissance to 1815.

HIS 102. MODERN WESTERN CIVILIZATION FROM 1815 TO THE PRESENT. (3) Prerequisite: HIS 101. Continuation of HIS 101 with greater emphasis on developments outside the Atlantic community of Western Civilization.

HIS 103. AMERICAN HISTORY I. (3) Survey of American history from the earliest times to 1865.

HIS 104. AMERICAN HISTORY II. (3) Survey of American history from 1865 to the present.

HIS 105. ANCIENT HISTORY. (3) From the earliest civilizations until the fourth century A.D.

HIS 106. MEDIEVAL HISTORY. (3) Political and cultural developments from the late Roman Empire until the Renaissance.

HIS 107. ASIAN HISTORY. (3) A survey of the major contributions of the Asian world until the modern period.

HIS 108. MODERN ASIA. (3) A continuation of HIS 107 with a special focus on the rise of Asian nationalism and the emergence of Asia into the modern world.

HIS 109. HISTORY OF LATIN AMERICA I. (3) A survey of the cultural, political and economic developments of Latin America during the colonial period.

HIS 110. HISTORY OF LATIN AMERICA II. (3) A survey of the cultural, political and economic developments of Latin America during the national period. A special focus will be placed on the rise of nationalism and revolutionary movements.

HIS 111. AFRICAN HISTORY I. (3) A survey of historical developments in sub-Saharan Africa, North Africa, West Africa, East Africa and Central Africa.

HIS. 112. AFRICAN HISTORY II. (3) A continuation of HIS 111.

HIS 301. THE EARLY MIDDLE AGES (312 A.D. - 1066 A.D.). (3) Western Europe from Constantine to the Norman Conquest. A study of Christianity, the "Fall of Rome," the Germanic kingdoms, Islam and Carolingian and Ottonian empires.

HIS 302. THE HIGH AND LATER MIDDLE AGES (1056 A.D.-1349 A.D.) (3) Western Europe from the struggle between the empire and the papacy to the Black Death. A study of the crusades, origin of towns, parliaments, the middle class, universities, the secularization and centralization of governments.

HIS 303. HISTORY OF GREECE. (3) From the beginning of civilization in Greece to 332 B.C.

HIS 304. HISTORY OF ROME. (3) From the beginning of civilization in Italy to 284 A.D.

HIS 307. CRISIS IN EUROPE, 1560-1715. (3) A discussion of the general political, economic and intellectual crisis of seventeenth century Europe, with particular emphasis upon the evolution of absolutism, the emergence of the great powers and the origins of modern science.

HIS 309. NINETEENTH CENTURY EUROPE, 1814 - 1914. (3) A survey of the major political developments in European history from the Congress of Vienna. Emphasis will be placed on liberalism, nationalism, imperialism and the diplomatic agreements leading to World War I.

HIS 310. TWENTIETH CENTURY EUROPE, 1914 TO THE PRESENT. (3) A review of the causes and results of World War I, followed by an intensive study of the problems of peace, rise of new governments, collapse of collective security, World War II and the post-war period.

HIS 311. RUSSIAN HISTORY FROM EARLIEST TIMES TO 1801. (3) A survey of the development of the Russian people, focusing upon the rise and fall of the Kievan state, the impact of the period of Tartar domination, the rise of Muscovy and the growth of Tsarist autocracy before the reign of Alexander I.

HIS 312. RUSSIAN HISTORY, 1801 - 1917. (3) A survey of the decline and fall of the Tsarist empire, focusing upon the efforts of the last four rulers to perpetuate the monarchy and upon the factors working against the effort.

HIS 313. RUSSIAN HISTORY FROM 1917 TO THE PRESENT. (3) A survey of the development of Soviet Russia, focusing upon the October, 1917 Revolution, Lenin's years of rule, Stalin's rise to power, the Five Year Plans and the years since World War II.

HIS 321. THE BYZANTINE EMPIRE (330 A.D. - 1054 A.D.). (3) A study of the continuation of the Roman Empire from the establishment of Constantinople to the separation of Greek East and Latin West.

HIS 322. THE LATER BYZANTINE EMPIRE (1504 A.D. - 1453 A.D.). (3) A study of the struggle against Arab, Turk, and Latin invaders; the Slavs, the role of Byzantium in relation to the economic revolution of Western Europe and to the Italian Renaissance.

HIS 350. TOPICS IN HISTORY. (3) Treatment of an historical topic. (May be repeated for credit.)

HIS 361. BRITAIN TO 1485. (3) Survey of British history with emphasis on institutional, cultural, economic and imperial developments.

HIS 362. MODERN BRITAIN, 1485 - 1789. (3) Continuation of HIS 361 with some treatment of the British Empire.

HIS 363. MODERN BRITAIN AND THE BRITISH EMPIRE SINCE 1789. (Continuation of HIS 362 with greater emphasis on the Empire and Commonwealth.)

HIS 371. COLONIAL AMERICA. (3) Colonial history from the discoveries to 1763.

HIS 372. THE AMERICAN REVOLUTION AND EARLY NATION. (3) The achievement of independence and the formation of a national government, 1763 - 1800.

HIS 374. AMERICA IN CRISIS, 1824 - 1860. (3) A consideration of the new American nation in crisis. Attention is given to the development of nationalism under Jackson, the expansion of the new nation, the growth of sectionalism and the events leading to secession.

HIS 375. CIVIL WAR AND RECONSTRUCTION, 1860-1877. (3) A study of the American people in war and post-war adjustment. Emphasis is placed on the political, social and economic conditions of the North and South during the Civil War and Reconstruction period.

HIS 377. AMERICA IN THE TWENTIETH CENTURY, 1901 - 1932. (3) An intensive study of the political, economic, social and intellectual aspects of American democracy from 1901 to the Great Depression. Special emphasis on the impact of industrialization, American reform and the entry of the United States into the international arena.

HIS 378. AMERICA IN THE TWENTIETH CENTURY, 1932 TO THE PRESENT. (3) An intensive study of the political, economic, social and intellectual aspects of American democracy from the New Deal to the Great Society. Special emphasis on the New Deal and post-New Deal reform as well as on America's role in world affairs.

HIS 383. AMERICAN ECONOMIC HISTORY TO 1865. (3) Development of the American economy and its institutions, from European origins in the Commercial Revolution to the achievement of nationhood in the early nineteenth century.

HIS 385. AMERICAN FOREIGN RELATIONS, 1783-1901. (3) A study of American diplomatic history from the establishment of an independent foreign policy to the emergence of the United States as a world power.

HIS 386. AMERICAN FOREIGN RELATIONS, 1901 TO THE PRESENT. (3) A study of American diplomatic history from the administration of Theodore Roosevelt to the present. Special emphasis will be placed upon the interaction between domestic, economic, political and social changes and the formulation of American foreign policy.

HIS 387. AMERICAN LABOR HISTORY. (3) Life and thought of American working men from the colonial period to the present, with attention both to the individual and to the development of labor organizations.

HIS 391. HISTORY OF NORTH CAROLINA. (3) Emphasis on the colonial developments and on the constitutional, educational and transportation developments of the ante-bellum period.

HIS 393. THE FRONTIER IN AMERICAN HISTORY. (3) A study of the influence of the moving frontier line on the historical development of the United States. Emphasis will be placed on the trans-Mississippi Western United States. For comparative purposes some consideration will be given to other world frontiers.

Courses for Advanced Undergraduates

HIS 402. FRENCH REVOLUTION AND NAPOLEON. (3) The changes in French politics and society and their effect on the Western world, 1789-1815.

HIS 461. TUDOR ENGLAND, 1485-1603. (3) Treatment in depth of the English Reformation, the English Renaissance and the creation of English naval and economic power.

HIS 462. STUART ENGLAND, 1603-1714. (3) Treatment in depth of the socio-economic and political phases involved in the Civil War, Restoration and Glorious Revolution, and International and Colonial involvement.

HIS 472. ORIGINS OF THE AMERICAN CONSTITUTION. (3) The historical and philosophical background which led to the adoption of the American Constitution. Emphasis is placed on the Constitution's background. The course traces the writing and development of the Constitution through the Marshall Court.

HIS 487. AMERICAN SOCIAL AND INTELLECTUAL HISTORY TO 1860. (3) Development of American social institutions and thought from the beginning of the Civil War. The course is conducted as a colloquium, combining lectures, discussions, extensive reading and oral reports and a research paper by each student.

HIS 488. AMERICAN SOCIAL AND INTELLECTUAL HISTORY SINCE 1860. (3) Continuation of HIS 487 from the Civil War to the present.

HIS 491. TUTORIAL IN HISTORY. (3) Prerequisite: consent of the department. Seminar in historical method, bibliography and purpose of historical writing. A major research paper under the direction of a staff member.

HIS 492. SEMINAR IN HISTORY. (3) Prerequisite: consent of the department. An intensive examination of a subject in history to be offered as special circumstances require. (May be repeated for credit.)

HUMANITIES

HUM 301. THE MEANING OF DEATH. (3) An investigation into the experience of death in the western tradition. Study of selected philosophical, religious, existential, psychological and literary readings with a view of clarifying the conceptual problems involved in our ways of speaking about death. Explorations into the understanding of death as a horizon for understanding life.

HUM 350. TOPICS IN HUMANITIES. (3) (May be repeated for credit with consent of the student's major department.) Prerequisite: junior standing and consent of the sponsoring departments. Topics chosen from the general area of the humanities in order to demonstrate relationships and interdisciplinary influences.

DEPARTMENT OF PHILOSOPHY

Chairman: Associate Professor Shumaker
Associate Professor: Fishman
Assistant Professors: Lincourt, Presler, Toenjes
Instructor: Cook

A major in philosophy consists of a minimum of 28 semester hours in philosophy and includes courses 201, 205, 302, 303 and two senior seminars. Additional work is to be chosen from other philosophy offerings.

Required related work consists of 15 hours, such work to be chosen in consultation with the department representative or adviser. Students contemplating graduate study in philosophy are encouraged to undertake related work in the natural or physical sciences and to develop reading proficiency in German and French.

PHILOSOPHY

PHI 201. INTRODUCTION TO PHILOSOPHY. (3) An introduction to some of the basic concepts and problems of philosophy. Typical problems are freedom and determinism, mind-body interaction, the status of moral judgments and the problem of perception. Readings from the works of representative philosophers both classical and contemporary.

PHI 205. DEDUCTIVE LOGIC. (3) A first course in the general principles of deductive logic, both classical and symbolic, with emphasis on the use of formal logic in analysis of ordinary language discourse.

PHI 301. ETHICS. (3) A study of the development of ethical thought in ancient and modern times, with special references to present day ethical problems. Readings selected from classical and contemporary sources.

PHI 302. ANCIENT PHILOSOPHY. (3) Prerequisite: PHI 201 or junior standing. An inquiry into the history of Western intellectual and philosophic thought from the early Greeks to the post-Aristotelian period. Readings from the pre-Socratics, Plato, Aristotle, Epicureans, Stoics, Skeptics and Neoplatonists.

PHI 303. MODERN PHILOSOPHY FROM DESCARTES TO KANT. (3) Prerequisite: PHI 201 or junior standing. An inquiry into the development of modern philosophic and scientific thought. Readings selected from respective works in the seventeenth to the nineteenth centuries.

PHI 305. CONTEMPORARY PHILOSOPHY. (3) Prerequisite: PHI 201. A study of the main movements and problems of contemporary philosophy: pragmatism, logical positivism, linguistic analysis, existentialism.

PHI 325. AESTHETICS. (3) Prerequisite: PHI 201 or junior standing. A study of the major theories of art, including readings from Aristotle, Kant, Nietzsche, Santayana, Collingwood, Croce and Dewey. Emphasis is on the following categories: expression, criticism, the work of art, the creative process.

PHI 350. TOPICS. (3) May be repeated for additional credit with the approval of the department. Prerequisite: consent of the department. Topics chosen from specific areas in philosophy such as symbolic logic, philosophy of science, freedom and determinism, philosophy in literature, detailed study of significant philosophic movements or detailed study of the works of individual philosophers.

PHI 365. THEORY OF KNOWLEDGE. (3) Prerequisite: PHI 201. An analysis of the concepts of meaning, belief, knowledge, truth and discussion of the analytic-synthetic distinction. Readings from historical and contemporary sources.

PHI 375. METAPHYSICS. (3) Prerequisite: PHI 201. An investigation of the history of metaphysics, focusing on the concept of experience. Authors to be disucssed include Aristotle, Hume, Lewis, Hegel, James Peirce, Dewey and Whitehead.

PHI 401. PHILOSOPHY OF RELIGION. (3) Prerequisites: PHI 201 and junior standing. A discussion of the philosophical implications of religious experience. The definitions, development and diverse forms of the problems of belief and reason in modern thought.

PHI 402. PHILOSOPHY OF THE EAST. (3) Prerequisite: six hours of philosophy. A survey of thought in the East from ancient to modern times. Special emphasis on the philosophical concepts of Hinduism, Buddhism, Confucianism and Taoism.

PHI 425. AMERICAN PHILOSOPHY. (3) Prerequisite: PHI 201 or junior standing or consent of the instructor. A survey of European philosophic movements which had counterparts in American thought, leading to distinctively American Pragmatism, Realism and Humanism. Readings from contemporary American philosophers.

PHI 445. PHILOSOPHY OF MIND. (3) Prerequisite: PHI 201. A study of the conceptual issues in the mind body problem and the problem of other minds. Analysis of concepts of intention, motivation, consciousness, imagination and emotion.

PHI 491. SEMINAR. (2) Prerequisite: consent of the department. Individual or group inquiry into selected philosophic problems. Exposition and discussion of the results.

PHI 492. SEMINAR. (2) Prerequisite: consent of the department. A continuation of PHI 491.

DEPARTMENT OF RELIGIOUS STUDIES

Acting Chairman: Associate Professor Capps
Professor: Witherspoon
Associate Professor: St. Clair
Assistant Professors: Gestwicki, Meyer, Thomas
Instructor: White

A student may satisfy the requirements for a major in religious studies after completing nine hours in the area of Introductory Religious Studies (normally including Religion 203 and 204) in one of the two following programs:

(A) *Course program in religious studies:* A student who elects this option will satisfy the requirements for a major in religious studies by completing a minimum of 18 hours of upper-level religious studies courses with at least one course from each of the areas of Eastern Religious Thought, Judeo-Christian Thought, and Religion and Culture.

(B) *Interdisciplinary program in religious studies:* This option is intended to provide a course of studies which will make maximum use of the interdisciplinary aspects inherent in religious studies. Before the beginning of the junior year, a student may submit a proposal for a program of study for his junior and senior years. If the proposal is approved by the department, the student will satisfy the requirement for a major in religious studies by completing his approved program rather than by taking any specified number of religious studies courses. This is not an honors program, and any student may submit a proposal to the department. A detailed description of this program may be obtained at the departmental office.

COURSE DESCRIPTIONS

RELIGIOUS STUDIES

Introductory Religious Studies

Religious Studies 201, 202, 203 and 204 are separate courses and may be taken in any order without prerequisite.

REL 201. HEBREW RELIGIOUS THOUGHT. (3) An introduction to the Hebrew religious tradition from the perspective of its development in the culture of the ancient Near East and from the perspective of its subsequent impact on Western culture. Analysis of selected Hebrew Scriptures and other writings from the Jewish tradition in English translation.

REL 202. ORIGINS OF CHRISTIANITY. (3) A study of the emergence of Christianity in its cultural context. Analysis of selected early Christian writings in English translation.

REL 203. EASTERN RELIGIONS. (3) An introduction to selected religions of the East such as Islam, Hinduism, Buddhism, Chinese and Japanese religions. Special emphasis on their world views as expressed in the functional use of myth and symbol in the traditions.

REL 204. RELIGION AND CONTEMPORARY CULTURE. (3) An introduction to the critical study of the religious dimension of human existence. Attention given to the function of myth, symbol and artistic imagination in the development of religious sensibilities and to the impact of modern scientific and cultural forms on contemporary religious thought and action.

Eastern Religions

REL 311. HINDUISM. (3) Prerequisite: REL 203 or consent of the instructor. A study of the ancient Vedic traditions and the development of Hinduism. Emphasis placed on the role of Hinduism in the development of Indian civilization.

REL 312. BUDDHISM. (3) Prerequisite: REL 203 or consent of the instructor. The historical development of Buddhism with special attention given to its diverse manifestations in South Asia.

REL 313. TAOISM. (3) A study of Chinese religious traditions, concentrating on Taoism in its philosophical formulations (Lao Tzu, Chuang Tzu) as well as its development in meditation, yoga, alchemy and ritual orthodoxy.

REL 314. ISLAM. (3) Prerequisite: REL 203 or consent of the instructor. A study of the development of the traditions in Islam with special emphasis on Islamic culture, literature and mysticism.

REL 315. VISUAL MYSTERIES OF INDIA. (3) Prerequisites: REL 203 or consent of instructor. A study of the visual expressions of Hindus, Buddhists, Jainas and Muslims in the caves, temples, paintings and sculptures of India. Discussions include a historical study of various types of art, the moods these visual images express and create in the worshipper, the nature of illusion in Indian religious imagery and the ideas of Indian aesthetics.

REL 316. ZEN BUDDHISM. (3) A study of Buddhist origins in India, development of the Ch'an (Zen) School in China and Japan, with special emphasis on the formative influences of Zen on Japanese art and culture.

REL 411. TIBETAN RELIGION. (3) Prerequisite: REL 203 or consent of instructor. A study of the symbols, beliefs and practices of the Tibetan tradition, which grew out of the fusion of the ancient native religion and Buddhism.

REL 419. SEMINAR: EASTERN RELIGIONS. (3) Prerequisite: consent of instructor. An intensive investigation of a special topic in the area of Eastern religions.

Judeo-Christian Thought

REL 321. HEBREW PROPHETIC RELIGION. (3) Prerequisite: REL 201 or consent of the instructor. The historical development of the prophetic movement from its origins to its culmination in the classical prophets of the eighth to the sixth centuries B.C. Emphasis placed on the contributions of the prophets to their own day and their significance for contemporary religious thought.

REL 322. THE PSALMS AND WISDOM LITERATURE OF ISRAEL. (3) Prerequisite: REL 201 or consent of the instructor. A study of the origin and content of the Psalms and a study of the place of wisdom literature in the development of Hebrew thought.

REL 324. CHRISTIAN ORIGINS: JESUS. (3) Prerequisite: REL 202 or consent of the instructor. An intensive study of the synoptic gospels for an understanding of Jesus and the religion he taught.

REL 325. CHRISTIAN ORIGINS: PAUL. (3) Prerequisite: REL 202 or consent of the instructor. A detailed analysis of the Pauline corpus. Particular reference is made to the occasion, purpose and significance of each letter for the emerging Christian community.

REL 327. JUDAISM. (3) Prerequisite: junior standing or consent of the instructor. A systematic survey of the development of Jewish religious thought from the Middle Ages to the present. Reading from Maimonides, Buber and others.

REL 328. MODERN CHRISTIAN THOUGHT. (3) Prerequisite: junior standing or consent of the instructor. A study of the contributions of the major creative thinkers who have interpreted the Christian tradition in the context of the modern world. Readings selected from such figures as Schleiermacher, Kierkegaard, Barth, Tillich, Rahner and Ong.

REL 429. SEMINAR: JUDEO-CHRISTIAN THOUGHT. (3) Prerequisite: consent of the instructor. An intensive investigation of a special topic in the area of Judeo-Christian thought.

Religion and Culture

REL 331. RELIGION IN AMERICAN CULTURE. (3) An inquiry into the role of religion in the shaping of American culture.

REL 333. SCIENCE, TECHNOLOGY AND HUMAN VISION. (3) Study of the impact of science and technology on the way we see ourselves and the world. Attention given to such topics as the relationship of science and religion, the place of the individual in a technological society and the visions of the scientific future.

REL 334. RELIGION AND LITERARY IMAGINATION. (3) Prerequisite: junior standing. An investigation of some enduring problems of religious thought and action as they have been expressed, directly and indirectly, in selected works of contemporary literature.

REL 335. THE BOUNDARIES OF LANGUAGE. (3) An examination of the adequacy of language to function as the symbolic framework for reflecting on the ultimate questions of human existence. Language studied in its boundary situations—first, at the boundaries where nonverbal, pre-reflective meaning which is rooted in the body crosses over to the verbal, reflective level of language; second, at the boundaries where language is forced beyond its ordinary uses in attempts to speak of meaning beyond language.

REL 336. VISUAL SYMBOLS OF THE HUMAN SPIRIT. (3) An examination of the role of the visual arts in the development of the human spirit. A brief study of art in traditional religions followed by an emphasis on the erosion of the traditional symbols and the attending movement of art away from traditional religious subject matter. Course concludes with an investigation of modern art in an attempt to reflect on the meaning of the visual symbols which are informing our contemporary imagination.

REL 337. RELIGIOUS ODYSSEY IN MODERN FILM. (3) Major foreign and American films made after World War II seen and discussed in terms of what they reflect about the ultimate concerns of

contemporary western culture and what this implies for today's thinking in religion.

REL 338. DREAMS AND RELIGIOUS IDENTITY. (3) Begins by learning how to understand our private dreams. Analogies with the process of dreaming explored at the public or cultural level of "dreaming" as in artworks and especially at the level of religious experience and expression as in symbols and myths.

REL 339. PRIMITIVE RELIGIONS. (3) A discussion of the evidence for the religious conceptions of pre-historic man, painting, sculpture, artifacts, burial practices, etc. A study of two or three selected examples of tribal religion in the modern period, taken from paleolithic and neolithic levels of culture.

REL 431. PHILOSOPHY OF RELIGION. (3) Prerequisites: PHI 201 and junior standing (same as PHI 401).

REL 432. RELIGION AND MODERN THOUGHT. (3) Prerequisite: consent of the instructor. An intensive analysis of selected issues which stem from the interaction of modern thought and modern religious sensibilities.

REL 433. AMERICAN INDIAN RELIGIONS. (3) Prerequisite: consent of the instructor. A study of the myths and rituals of the American Indians with special attention to an understanding of the function of myth in defining world views and rituals as visual enactment of and involvement in those views.

REL 439. SEMINAR: RELIGION AND CULTURE. (3) Prerequisite: consent of the instructor. An intensive investigation of a special topic in the area of religion and culture.

Special Studies

REL 350. TOPICS IN RELIGION. (3) Prerequisite: consent of the instructor. May be repeated for credit. Treatment of a special topic in religious studies.

REL 490. INDEPENDENT STUDIES. (1 to 3) Prerequisite: consent of department. May be repeated for credit. Individual investigation and appropriate exposition of the results.

College of Nursing

Dean: Professor Jernigan
Dean Emeritus: Brocker
Associate Professors: Caddell, Nicholson, Smith
Assistant Professors: Anderson, Brady, Leonard, Maul, J. Mauldin, R. Mauldin, Maynard, Norris
Instructors: Crawford, Davenport, Evans, Harvey, Hulon, Mobley, Morgan, Moses, Pappas, Sanders, Stitt

The College of Nursing derives its purpose from those of the University of North Carolina at Charlotte and affirms its intention to teach nursing, to participate in the search for truth and to serve those who are concerned about the health care of the citizens of North Carolina. The purpose of the College of Nursing is to prepare a family health nurse who is a generalist, capable of:

1. Providing nursing care for members of families in various settings;
2. Functioning as a change agent and a leader in the promotion of health; and
3. Advancing through further education at the graduate level.

Philosophy

The philosophy of the College of Nursing has evolved through both faculty and student participation in committees and in conferences charged with planning activities for the University and the College, by working toward the solution of problems that arise daily, by the pooling of experiences and by looking toward the future.

The College of Nursing sees itself as a workshop in humanity—a place within the University where persons who meet admission requirements, without consideration of race, creed, sex or belief, may come to study in an atmosphere that encourages the process of learning. Further, the faculty believes that in this workshop both faculty and students can seize opportune moments and life experiences so that they discover together how to learn continuously and creatively and how to find one's own way to contribute to the world community as an educated person with social and colleague responsibilities.

Learning is seen as the development of competencies necessary for self-analysis, value judgments, choice evaluation and behavioral changes. The faculty believes that professional nursing education belongs in a university setting. This environment provides opportunities for intellectually curious and capable students to develop their individual potentials and integrate learnings from the arts and sciences as they acquire nursing knowledge.

The faculty believes that nursing is a profession with responsibilities and privileges, concerned with the promotion, maintenance and

restoration of optimal health as well as providing supportive care when death is imminent. The College faculty hold that nursing helps to fulfill a universal need for health care services and that the uniqueness of nursing is found in the ways in which these services are performed. They further believe that nursing is an important social force which makes an essential contribution to the total health program of society.

The curriculum of the College is designed to prepare a family health nurse who is a generalist, capable of providing nursing care for members of families in various settings. The family health nurse utilizes the nursing process, which is defined by this faculty as assessing, planning, implementing and evaluating. This process is deliberative, interactive, scientifically based and devoted to helping individuals, families and groups make maximum use of their internal and environmental resources in meeting their respective health needs. In providing care, the family health nurse acts in dependent, independent and collaborative roles.

The family health nurse utilizes concepts and principles of health, developmental theories, hierarchy of needs and interpersonal theories in assisting the family and/or family member in maintaining or regaining optimal health. The family is seen as a natural unit in which socialization of man occurs. A change in the health status of one family member influences the total family relationships, and, conversely, the family influences individual health. Health is viewed as a dynamic state in which there is a constant striving by man for homeostasis while interacting with biopsychosocial influences.

Expanding knowledge in all fields of health, an increasingly better educated public, new systems for delivery of health care and changing attitudes toward health will bring about different expectations of the professional nurse in the future. Universal opinion places the importance of man's knowledge of ecological factors in sharp focus; therefore, the family health nurse must be able to facilitate understanding of how man influences his environment and his environment influences his health. The faculty believes the family health nurse can be a change agent by assuming a more independent role in assessing and in meeting society's health needs.

The faculty believe that, upon graduation, the family health nurse has acquired a sound foundation for leadership, advanced study and research and will assume responsibility for continued intellectual and personal growth.

Objectives

In a setting designed to foster inquiry and discovery, the curriculum leading to a Bachelor of Science degree with a major in Nursing is planned through a continuum of learning experiences to prepare a family health nurse who will:

1. Utilize the nursing process with the family and its members to promote, maintain and restore optimal health.

2. Utilize appropriate nursing roles in supporting the health of the family and its members in a variety of community settings.

3. Utilize knowledge of developmental theories to assist the family and its members in achieving an optimal level of health.

4. Utilize knowledge of interpersonal theories to promote therapeutic and colleague relationships.

5. Demonstrate movement toward self-actualization by evaluating his own behaviors and striving for personal and professional growth.

6. Function as a change agent and a leader in the promotion of health of the family, the community and society.

7. Contribute to nursing knowledge through critiquing, participating in and utilizing scientific investigation.

8. Be capable of advancing through further education at the graduate level.

The Bachelor of Science degree with a major in Nursing is comprised of 120 semester hours credit, 50 of which are in the Nursing major. This allocation of credit for Nursing courses takes into consideration the student's needs for: 1) a strong general education base (50 semester hours) to complement and support the Nursing major; 2) an opportunity to pursue, within the University, electives (20 semester hours) which add to his portfolio of learning in terms of personal and professional interests; and 3) time to participate in campus activities and creative pursuits.

Nursing and general education courses are arranged so that there is a continual interchange of theory and practice. The curriculum of the College of Nursing proceeds in a series of planned sequential learning experiences that involve the student in the teaching-learning process and permit development of the intellectual processes of inquiry, analysis, synthesis and creativity.

Requirements for Progression in the Nursing Program

In order to promote the progression of safe practitioners from one level to the next within the College of Nursing and eventually into the nursing profession, students

1. must achieve a minimum grade of *C in each nursing course.*

    a. A grade of *C* or better is required in both theory and laboratory experience in each nursing course. The final grade will be recorded as a combined grade.

    b. Only one *D* in a natural science is acceptable for credit by the College of Nursing.

2. may not repeat a nursing course more than once. If a student repeats a nursing course and does not achieve a minimum of *C* she will be asked to withdraw from the College of Nursing.

3. may not progress to the next level in the nursing curriculum until the prerequisite nursing courses have been completed.

4. may not attempt junior level nursing courses until Biology 101, 203, 205 and Chemistry 103 and 104 and sophomore level nursing courses have been completed.

5. may not attempt senior level nursing courses until all junior level nursing courses have been completed.

6. must meet the earned hour and cumulative QPR requirements for continuance as stated in the catalog of UNCC.

CURRICULAR REQUIREMENTS FOR THE BACHELOR OF SCIENCE DEGREE WITH A MAJOR IN NURSING

FRESHMAN YEAR

English 101	3	English 102	3
Math/Language	3-4	Math/Language	3-4
Biology 101	4	Nursing 102	3
Chemistry 103	4	Chemistry 104	4
	—	Sociology 151	3
	14-15		—
			16-17

SOPHOMORE YEAR

Nursing 201	4	Nursing 202	4
Biology 203	4	Biology 205	4
Sociology 232	3	Elective	6-8
Psychology 101	3		—
Elective	3		16-18
	—		
	17		

JUNIOR YEAR

Nursing 301-A	4	Nursing 301-B	4
Nursing 302	4	Nursing 303	4
Psychology 307	3	Electives	6
Elective	3		—
	—		14
	14		

SENIOR YEAR

Nursing 401	5	Nursing 402	5
Nursing 403	5	Nursing 404	4

Nursing 491	2	Nursing 492	2
Elective	3	Elective	3
	15		14

COURSE DESCRIPTIONS

NURSING

NUR 102. ECOLOGY OF MAN. (3) The focus of the course is directed toward understanding the relationship of selected environmental and social factors to man's health and the meaning of health and illness to the individual, his family and the community. Major health problems are explored along with a wide variety of facilities society provides for meeting health needs and solving health problems. Current trends in providing health care, including the individual's entry into the health care system, are also discussed.

NUR 201. FUNDAMENTALS OF NURSING I. (4) Prerequisites: NUR 102, CHE 103 and 104, BIO 101, SOC 151 or PSY 101 and sophomore standing. Corequisites: BIO 203 or 205, PSY 307 or SOC 232. The focus of this course is the nursing process, with emphasis on the assessment of the patient and his family to determine their physical and psychosocial needs. Basic principles and concepts essential for nursing care are introduced. Study of the well individual enhances the students' understanding of human development, behavior and aging.

NUR 202. FUNDAMENTALS OF NURSING II. (4) Prerequisites: NUR 201. Corequisites: BIO 203 or 205, PSY 307 or SOC 232. This course focuses on the planning and implementation phases of the nursing process in providing family-centered care. Students increase their knowledge and use of therapeutic techniques in assisting well and ill individuals. Experience is provided for the care of patients and their families before, during and after surgery.

NUR 301-A. NURSING OF THE ADULT FAMILY MEMBER I. (4) Prerequisites: junior standing; NUR 102, 201, 202; completion of sophomore pre and corequisites. Corequisites: NUR 302 or NUR 303. This course emphasizes the response of the adult and his family to illness, presenting content in a problem oriented manner. The course focuses on utilization of the nursing process in restoring the adult to an optimal level of wellness, pathophysiology and medical-surgical therapy serving as a basis for planning and implementing appropriate nursing care.

NUR 301-B. NURSING OF THE ADULT FAMILY MEMBER II. (4) A continuation of NUR 301-A.

NUR 302. NURSING OF THE CHILDBEARING FAMILY. (4) Prerequisites: junior standing; NUR 201, 202; completion of sophomore pre and corequisites. Corequisites: NUR 301-A or 301-B. This course is designed to enable the family health nurse student to utilize the nursing process, with emphasis on planning and implementing, in

provision of care to the childbearing family and its members. The focus is on growth and development of each family member along the wellness-illness continuum from fertilization through the puerperium-neonatal periods.

NUR 303. NURSING OF THE CHILD REARING FAMILY. (4) Prerequisites: junior standing; NUR 201, 202; completion of sophomore pre and corequisites. Corequisites: NUR 301-A or 301-B. This course enables the student to understand the basic concepts of patient care from infancy through the adolescent period with emphasis on the child rearing family. The interrelatedness of biopsychosocial principles is stressed. The student utilizes the nursing process with emphasis on planning and implementing as he provides nursing care for the child and his family along the wellness-illness continuum.

NUR 401. MENTAL HEALTH NURSING. (5) Prerequisite: completion of all required courses below the 400 level. This course is designed to assist the student in exploring and understanding the dynamics of interpersonal relationships as adaptive and maladaptive processes in individuals, families and groups. Emphasis is placed upon the development of awareness of personal behavior and its effect on the client relationship. Building on classical and current theory in psychology, sociology and physiology, content emphasis is on assisting the student in identifying, adapting, implementing and evaluating theoretical constructs which are most appropriate to 1) the learner's potential and 2) the client's need. The student works in hospital and community settings as he applies the nursing process to selected long-term client relationships.

NUR 402. NURSING OF THE ADULT FAMILY MEMBER III. (5) Prerequisites: completion of all required courses below the 400 level. This course is designed to further the student's knowledge of and skill in providing care for adult family members who have demonstrated alterations in body functions. Opportunities are provided for experiences in triage, ambulatory care, acute care, referral to community agencies and home visits. Emphasis is placed on independent decision making in applying the nursing process in the care and support of family members in such specialized areas as acute coronary care, open heart recovery area, hemodialysis unit and emergency room.

NUR 403. COMMUNITY HEALTH NURSING. (5) Prerequisites: completion of all required courses below the 400 level. This course is designed to assist the student in utilizing communication and interpersonal skills in family-centered and community settings; understanding the nursing process in promotion of high level wellness and health maintenance for families and communities; understanding professional responsibility as a health team member in an interdisciplinary approach to family and community health; utilizing knowledge of community health theory in evaluating the health care for individuals, families and communities; and relating community health and community health nursing to current practice and trends to health care.

NUR 404. MANAGEMENT OF PATIENT CARE. (4) Prerequisites: completion of all required courses below the 400 level. The focus of this course is on the application of management theory as the learner assumes responsibility for the delivery of health care to family members through organized group effort.

NUR 490. TOPICS IN NURSING. (3) Prerequisites: consent of the College. Topics to be chosen from the specialties of nursing.

NUR 491. RESEARCH IN NURSING I. (2) Prerequisites: completion of all required courses below the 400 level. Introduction to research in nursing. Students review and critique studies from nursing and related areas.

NUR 492. RESEARCH IN NURSING II. (2) Prerequisite: NUR 491. This course provides opportunity for the student to study a nursing problem using the research method.

College of Science and Mathematics

Acting Dean: Charles H. Stone Professor Burson

The College of Science and Mathematics includes the Departments of Biology, Chemistry, Mathematics and Physics.

DEPARTMENT OF BIOLOGY

Chairman: Professor Arvey
Professors: Hechenbleikner, Hildreth, Matthews
Associate Professors: Hogan, Menhinick
Assistant Professors: Barden, Bashor, Butts, Darner, Edwards, Graul, Haviland, Johnson, Oliver, Ostrowski, Travis

A major in biology leading to the B.A. degree consists of 32 semester hours of biology including Biology 211, 221, 231, 491 and one course each in three areas to be chosen from development, ecology, genetics and physiology. A minimum of five laboratory courses in biology is required. Additional requirements are 12 semester hours of chemistry with associated labs, including Chemistry 101 and 102; and six semester hours of mathematics.

Each biology major must show a proficiency through the second semester freshman level of a foreign language either by satisfactory completion of courses 101 and 102 in the language or by achieving a satisfactory score on an appropriate test. Students contemplating attending graduate school are strongly recommended to gain a proficiency in French, German or Russian.

In addition to the requirements for the B.A. degree, a student wishing to receive the B.S. degree is required to take eight additional hours in biology, for a total of 40 hours; Chemistry 231 and 232, with associated labs, in place of the chemistry elective; Physics 101 and 102, and three additional hours of mathematics (MAT 122 or CSC 100 is suggested).

SUGGESTED CURRICULUM FOR THE B.A. DEGREE IN BIOLOGY

FRESHMAN YEAR

Chemistry 101	4	Biology 211	4
English 101	3	Chemistry 102	4
Mathematics 103	3	English 102	3
Electives	6-7	Mathematics or Computer Science Elective	3
	16-17	Electives	3-4
			17-18

SOPHOMORE YEAR

Biology 221 4	Biology 231 4
Chemistry elective 4	Electives 9-12
Electives 6-9	—
—	13-16
14-17	

JUNIOR YEAR

Biology electives 8	Biology electives 8
Electives 6-9	Electives 6-9
—	—
14-17	14-17

SENIOR YEAR

Biology 491 1	Electives 15
Biology elective 4	—
Electives 9-12	15
—	
14-17	

SUGGESTED CURRICULUM FOR THE B.S. DEGREE IN BIOLOGY

FRESHMAN YEAR

Chemistry 101 4	Biology 211 4
English 101 3	Chemistry 102 4
Mathematics 103 3	English 102 3
Electives 6-7	Mathematics 120 or 141 or Computer Science 3
—	Electives 3-4
16-17	—
	17-18

SOPHOMORE YEAR

Biology 221 4	Biology 231 4
Chemistry 231 4	Chemistry 232 4
Mathematics 122 or 142 or Computer Science 3	Mathematics 122 or 142 or Computer Science 3
Electives 3-6	Electives 6-9
—	—
14-17	14-17

JUNIOR YEAR

Biology elective 4	Biology elective 8
Physics 101 4	Physics 102 4
Electives 6-9	Electives 3-6
—	—
14-17	15-18

SENIOR YEAR

Biology electives	8	Biology 491	1
Electives	6-9	Biology electives	8
	—	Electives	6
	14-17		—
			15

B.A. IN BIOLOGY
*WITH AN OPTION IN MEDICAL TECHNOLOGY**

A student may complete the departmental requirements for the B.A. degree in Biology in three years. Upon satisfactory completion of training in medical technology at a school of medical technology, which has been approved by the National Registry of Clinical Pathologists and UNCC, the student may receive a B.A. degree in Biology from UNCC. A maximum of 30 hours will be accepted from the school of medical technology. Eight of these hours will apply toward the requirements for the major in Biology. The student must have at least a 2.0 average, overall and in the major, at the end of the junior year. The final 30 hours counted toward the degree and the last 12 hours counted toward the major prior to entering a school of medical technology must be taken at UNCC. The student may obtain information from his departmental adviser concerning those specific schools of medical technology cooperating with UNCC in this program.

FRESHMAN YEAR

Chemistry 101	4	Biology 211	4
Mathematics 103	3	Chemistry 102	4
English 101	3	Mathematics 122	3
Electives	6-7	English 102	3
	—	Elective	3-4
	16-17		—
			17-18

SOPHOMORE YEAR

Biology 221	4	Biology 231	4
Biology 331	3-4	Chemistry elective	4
Chemistry 231	4	Electives	6-7
Elective	3		—
	—		14-15
	14-15		

JUNIOR YEAR

Biology 311	3-4	Biology 491	1
Electives	11-12	Electives	14-16
	—		—
	14-16		15-16

TOTAL 90-97

*It is possible to obtain a B.S. degree in biology by careful planning with the adviser.

SENIOR YEAR

At an approved School of Medical Technology

COURSE DESCRIPTIONS

BIOLOGY

BIO 101. PRINCIPLES OF BIOLOGY. (4) No credit toward a Biology major. A course designed to acquaint the student with the fundamental principles of life. Three lecture hours and one laboratory period of two hours a week.

BIO 203. BACTERIOLOGY. (3) Prerequisites: one semester of biology and one semester of chemistry. No credit toward a Biology major. Basic physiology of bacteria and viruses, with emphasis on the pathogens and the epidemiology of microbial diseases. Three lecture hours a week.

BIO 203A. BACTERIOLOGY LABORATORY. (1) Prerequisite or corequisite: BIO 203. One laboratory period of three hours a week.

BIO 205. HUMAN ANATOMY AND PHYSIOLOGY. (3) Prerequisite: one semester of biology. No credit toward a Biology major. Basic fundamentals of the anatomy and physiology of the human body as an integrated unit. Three lecture hours a week.

BIO 205A. HUMAN ANATOMY AND PHYSIOLOGY LABORATORY. (1) Prerequisite or corequisite: BIO 205. One laboratory period of three hours a week.

BIO 211. PLANT BIOLOGY. (4) Prerequisite: open to majors and non-majors; one course in biology prerequisite for non-majors. The morphology, function, reproduction, phylogeny and ecology of plants. Three lecture hours and one laboratory period of three hours a week.

BIO 221. ANIMAL BIOLOGY. (4) Prerequisite: open to majors and non-majors; one course in biology prerequisite for non-majors. The morphology, function, development, phylogeny and ecology of the principle invertebrate and vertebrate types. Three lecture hours and one laboratory period of three hours a week.

BIO 231. CELL BIOLOGY. (4) Prerequisite: two semesters of chemistry. Structural, functional and genetic aspects of cells; principles underlying living systems. Three lecture hours and one laboratory period of three hours a week.

BIO 301. NATURAL HISTORY. (4; Prerequisite: open to students in elementary education and to others with consent of department. No credit toward a Biology major. Ecological aspects of plant and animal distribution, the importance of conservation of natural resources and plant and animal identification. Three lecture hours and one laboratory period of three hours a week.

BIO 311. MICROBIOLOGY. (3) Prerequisites: two semesters of chemistry and one semester of biology. Morphology, physiology and methods of culture and control of bacteria, viruses and related microorganisms. Three lecture hours a week.

BIO 311A. MICROBIOLOGY LABORATORY. (1) Prerequisite or corequisite: BIO 311. One laboratory period of three hours a week.

BIO 319. PLANT SYSTEMATICS. (4) Prerequisite: BIO 211. Identification, classification and phylogenetic relationships of seed plants, including preparation and preservation of specimens. Two lecture hours and two laboratory periods of two hours each week.

BIO 323. PARASITOLOGY. (4) Prerequisite: BIO 221. Morphology, life cycles, ecology, taxonomy and economic importance of parasites. Three lecture hours a week and one laboratory period of three hours a week.

BIO 331. GENETICS. (3) Prerequisite: one semester of biology. Basic concepts of heredity: principles of classical and molecular genetics. Three lecture hours a week.

BIO 331A. GENETICS LABORATORY. (1) Prerequisite or corequisite: BIO 331. One laboratory period of three hours a week.

BIO 335. HUMAN GENETICS. (3) Prerequisite: one semester of biology. The inheritance of physical and mental characteristics in man. Effects of mutation, selection, migration and environment are considered. Three lecture hours a week.

BIO 338. EMBRYOLOGY. (3) Prerequisite: BIO 221. Developmental interactions during gametogenesis, fertilization, early embryology and organogenesis. Three lecture hours a week.

BIO 338A. EMBRYOLOGY LABORATORY. (1) Prerequisite or corequisite: BIO 338. One laboratory period of three hours a week.

BIO 345. COMPARATIVE VERTEBRATE ZOOLOGY. (4) Prerequisite: BIO 221. Comparative studies of the anatomy, physiology and functional adaptations of selected vertebrates with emphasis on evolutionary developments, especially in mammals. Three lecture hours and one laboratory period of three hours a week.

BIO 347. HISTOLOGY. (4) Prerequisite: BIO 101 or BIO 221 or BIO 231. A study of animal tissues and organs; techniques of preparing tissues for study. Two lecture hours and two laboratory periods of two hours each a week.

BIO 352. VERTEBRATE PALEONTOLOGY. (4) Prerequisite: BIO 101 or BIO 221. Evolution of vertebrate animals from the first fishes to man. Three lecture hours and one laboratory period of two hours a week.

BIO 361. ECOLOGY. (4) Prerequisites: BIO 211, 221, and one course in chemistry. Interrelationships of organisms and their environment. Three lecture hours and one laboratory period of three hours a week.

BIO 363. FIELD BIOLOGY. (4) Prerequisite: open to students in secondary education and to others with consent of department. Roles of soils, water and climate on plant growth and distribution; plant succession and its effect on animal distribution; identification and life histories of selected plants and animals. Three lecture hours and one laboratory period of three hours a week.

BIO 373. PLANT PHYSIOLOGY. (4) Prerequisites: BIO 211 and 231. Metabolic and physiological processes of plants and conditions which affect or regulate these processes. Three lecture hours and one laboratory period of three hours a week.

BIO 375. ANIMAL PHYSIOLOGY. (4) Prerequisites: BIO 221 and one course in chemistry. Functional integration of tissues, organs and organ systems for maintenance of the steady state. Three lecture hours and one laboratory period of three hours a week.

BIO 395. SPECIAL TOPICS IN BIOLOGY. (1-4) May be repeated for credit. Prerequisite: consent of department. Used to comply with requests for special topics and advanced studies in biology. Lecture and laboratory hours will vary with the courses taught.

BIO 397. INTERNSHIP IN COMMUNITY EDUCATION AND SERVICE. (3) Prerequisites: junior standing, acceptance into the program and approval of the department. Corequisite: SBS 398. A project oriented, service-learning internship with cooperating community organizations. The Department of Biology has the option of recognizing this credit as fulfilling departmental requirements and granting permission to repeat for credit.

BIO 401. INTEGRATIVE STUDIES IN BIOLOGY. (3) No credit toward a Biology major, except one hour which may be substituted for Biology 491. A course for, but not limited to, persons preparing to teach grades 7-12. An integration of the various disciplines of biology, stressing the attitudes and techniques necessary to teach laboratory-oriented courses. Three lecture hours a week.

BIO 433. PLANT MORPHOGENESIS. (3) Prerequisites: BIO 211 and 231. Growth and development of plants with emphasis on physical and chemical differentiation during ontogeny. Three lecture hours a week.

BIO 433A. PLANT MORPHOGENESIS LABORATORY. (1) Prerequisite or corequisite: BIO 433. One laboratory period of three hours a week.

BIO 437. CYTOGENETICS. (4) Prerequisite: Biology 331. Plant and animal cells, with emphasis on problems of chromosomal organization, function, and behavior including the role of chromosome number and

aberrations in speciation and evolution. Three lecture hours and one laboratory period of three hours a week.

BIO 451. EVOLUTION AND POPULATION DYNAMICS. (3) Prerequisite: one course in genetics. Theories of evolution and forces which affect population dynamics. Three lecture hours a week.

BIO 461. LIMNOLOGY AND OCEANOGRAPHY. (4) Prerequisite: one course in chemistry, one course in ecology or consent of instructor. Geological, physical, chemical and biological aspects of lakes, streams, estuaries and oceans. Three lecture hours and one laboratory period of three hours a week.

BIO 473. IMMUNOLOGY. (3) Prerequisites: BIO 311 and one semester of organic chemistry. Basic concepts of disease resistance in mammals: non-specific defense mechanisms, physiochemical properties and interactions of antigens and antibodies, and cell-associated defense phenomena. Three lecture hours a week.

BIO 473A. IMMUNOLOGY LABORATORY. (1) Prerequisite or co-requisite: BIO 473. One laboratory period of three hours a week.

BIO 474. VIROLOGY. (3) Prerequisites: BIO 311 and two semesters of organic chemistry (a course in biochemistry is also recommended). Fundamental aspects of some sub-microscopic organisms: methods of study, identification and classification, replicative cycles and selected topics in viral genetics. Three lecture hours a week.

BIO 475. ENDOCRINOLOGY. (3) Prerequisites: BIO 375 and CHE 231. The endocrine glands and their role in the maintenance of normal body functions. Three lecture hours a week.

BIO 475A. ENDOCRINOLOGY LABORATORY. (1) Prerequisite or corequisite: BIO 475. One laboratory period of three hours a week.

BIO 477. CELL PHYSIOLOGY. (3) Prerequisite: BIO 231 and CHE 231. The fundamental physiochemical properties of cells. Three lecture hours a week.

BIO 484. RADIOISOTOPE TECHNIQUES. (4) Prerequisite: two semesters of chemistry. Use of radioisotopes in science: properties of sub-atomic particles, instrumentation, safety procedures and radioisotope labeling. Three lecture hours and one laboratory period of three hours a week.

BIO 491. SEMINAR. (1) Required of all majors, to be taken during the senior year. Pertinent topics in the field of biology and reports on original research are discussed. Students are required to act as the discussion leaders. One lecture hour a week.

BIO 497. INVESTIGATIONS IN BIOLOGY. (1-4) May be repeated for credit. Prerequisite: consent of the department. A course designed to allow junior and senior Biology majors to initiate research projects in their respective fields of interest.

DEPARTMENT OF CHEMISTRY

Acting Chairman: Associate Professor Gibson
Charles H. Stone Professor of Chemistry: Burson
Professor: Kuppers
Associate Professors: Bush, Crosthwaite, DuBois, Walsh
Assistant Professors: Cooke, Howard, Jones, Mattingly, Rillema

Students planning to start careers as chemists with the baccalaureate degree and those who intend to prepare for graduate study in chemistry should pursue the B.S. degree.

A major in Chemistry leading to the B.S.* degree consists of a minimum of 44 semester hours of chemistry among which must be included Chemistry 101, 102, 101L, 102L, 231, 232, 231L, 232L, 311, 341, 342, 411, 421, 431, 495 and 496. Related work in mathematics and physics must include Mathematics 141, 142, 241, 271 and Physics 221, 231, 251, 252. Two years of German or Russian are required for the B.S. degree.

The B.A. curriculum can be tailored to fit individual needs of those preparing for medical and dental schools, those considering graduate work in sciences closely related to chemistry and those desiring a liberal education with concentration in chemistry and related natural sciences.

A major in Chemistry leading to the B.A. degree consists of a minimum of 28 semester hours of chemistry among which must be included Chemistry 101, 102, 101L, 102L, 231, 232, 231L, 232L and 311. Related work must include Mathematics 141, 142 and eight hours of physics.

Students who complete a major in Chemistry automatically meet the chemistry subject matter requirements, on the secondary level, for teacher certification in North Carolina. Students seeking teacher certification should consult a coadviser in the College of Human Development and Learning for detailed planning of their professional education.

B.A. IN CHEMISTRY WITH AN OPTION IN MEDICAL TECHNOLOGY

A student may complete the departmental requirements for the B.A. degree in Chemistry in three years. Upon satisfactory completion of training in medical technology at a school of medical technology, which has been approved by the National Registry of Clinical Pathologists and UNCC, the student may receive a B.A. degree in Chemistry from UNCC. A maximum of 30 hours will be accepted from the school of medical technology. Four of these hours will apply toward the requirements for the major in chemistry. The student must have at least a 2.0 average, overall and in the major, at the end of the junior year. The final 30 hours counted toward the degree and the last 12

*The B.S. degree program is approved by the Committee on Professional Training of the American Chemical Society.

hours counted toward the major prior to entering a school of medical technology must be taken at UNCC. The student may obtain information from his departmental adviser concerning those specific schools of medical technology cooperating with UNCC in this program.

Honors Program in Chemistry

The recommended curriculum for the B.S. degree in Chemistry includes independent study and seminar presentation during the final year of study. To obtain a degree with Honors in Chemistry, the student must complete two semesters of independent research with a grade of Pass Honors, two semesters of the senior seminar with a grade of Pass Honors and at least one junior level laboratory course with a grade of Pass Honors. The student will formally enter the honors program at the beginning of his junior year or halfway through his junior year. Consideration for admission to the program may be initiated by the student or by any faculty member. The Honors Committee of the Chemistry Department will formally approve admission.

The department, in addition to the foregoing undergraduate programs, offers the *Master of Science degree in Chemistry*. This is a research-based program in which major emphasis is placed upon the research project and required thesis. Further details may be found in the *Graduate Catalog*.

RECOMMENDED CURRICULUM FOR THE B.A. DEGREE IN CHEMISTRY

FRESHMAN YEAR

Chemistry 101*	3	Chemistry 102*	3
Chemistry 101L*	1	Chemistry 102L*	1
English 101	3	English 102	3
Mathematics 103**	3	Mathematics 141**	4
Social Science	3	Social Science	3
Elective	3	Elective	3
	16		17

SOPHOMORE YEAR

Chemistry 231	3	Chemistry 232	3
Chemistry 231L	1	Chemistry 232L	1
Mathematics 142	4	German 102	4
German 101	4	Humanities	3
Humanities	3	Electives	6
	15		17

*Students who can demonstrate to the Chemistry Department proficiency in Chemistry 101, 102, 101L, and 102L (Principles of Chemistry) may start with Chemistry 231 and 231L (see Credit by Examination, page 56).

**For proper placement in the mathematics sequence, the student must take placement examinations offered by the Mathematics Department.

JUNIOR YEAR

Chemistry 311	4	Chemistry	3
Mathematics	3	Mathematics	3
Physics	4	Physics	4
German 201	4	German 202	4
	—	Elective	3
	15		—
			17

SENIOR YEAR

Chemistry	4	Chemistry	4
Electives	12	Electives	12
	—		—
	16		16

RECOMMENDED CURRICULUM FOR THE B.S. DEGREE IN CHEMISTRY

FRESHMAN YEAR

Chemistry 101*	3	Chemistry 102*	3
Chemistry 101L*	1	Chemistry 102L*	1
English 101	3	English 102	3
Mathematics 141**	4	Mathematics 142**	4
German 101	4	German 102	4
	—		—
	15		15

SOPHOMORE YEAR

Chemistry 231	3	Chemistry 232	3
Chemistry 231L	1	Chemistry 232L	1
Mathematics 241	3	Mathematics 271	3
Physics 221	3	Physics 231	3
Physics 251	1	Physics 252	2
German 201	4	German 202	4
	—		—
	15		16

JUNIOR YEAR

Chemistry 341	4	Chemistry 342	4
Chemistry 311	4	Chemistry 411	4
Humanities	3	Humanities	3
Social Science	3	Social Science	3
	—		—
	14		14

*Students who can demonstrate to the Chemistry Department proficiency in Chemistry 101, 102, 101L, and 102L (Principles of Chemistry) may start with Chemistry 231 and 231L (see Credit by Examination, page 56).

**For proper placement in the mathematics sequence, the student must take placement examinations offered by the Mathematics Department.

SENIOR YEAR

Chemistry 421	4	Chemistry 431	4
Chemistry 490	2	Chemistry 490	2
Chemistry 495	1	Chemistry 496	1
Electives	9	Electives	9
	16		16

RECOMMENDED CURRICULUM FOR THE B.A. IN CHEMISTRY WITH AN OPTION IN MEDICAL TECHNOLOGY

FRESHMAN YEAR

Chemistry 101*	4	Chemistry 102*	3
Chemistry 101L*	1	Chemistry 102L*	1
Mathematics 103**	3	Mathematics 141**	4
English 101	3	English 102	3
Physics 101	4	Physics 102	4
	14		15

SOPHOMORE YEAR

Chemistry 231	3	Chemistry 232	3
Chemistry 231L	1	Chemistry 232L	1
Mathematics 142	4	Biology 231	4
Biology 221	4	Social Science	3
Social Science	3	Humanities	6
	15		17

JUNIOR YEAR

Chemistry 311	4	Chemistry Elective	4
Biology 375	4	Electives	9-11
Biology 311	3		
Biology 311A	1		13-15
Elective	3		
	15		

TOTAL 90-92

SENIOR YEAR

At an approved school of medical technology.

Separate lecture and laboratory sections - Although the laboratory and lecture sections of CHE 101, 102, 103, 104, 231 and 232 are taught as separate courses, it is strongly recommended that students take the appropriate laboratory concurrently with the lecture. Students with severe scheduling problems or students with course programs which do not require the laboratory may take the lecture without the laboratory.

*Students who cam demonstrate to the Chemistry Department proficiency in Chemistry 101, 102, 101L, and 102L (Principles of Chemistry) may start with Chemistry 231 and 231L (see Credit by Examination, page 56).

**For proper placement in the mathematics sequence, the student must take placement examinations offered by the Mathematics Department.

Students withdrawing from lecture must also withdraw from any laboratory course for which the lecture is a corequisite.

Students using CHE 101 and 102 or CHE 103 and 104 to satisfy the *University Requirements* for the B.A. and B.S. Degrees (pages 41, 39) must also take CHE 101L and 102L or CHE 103L and 104L, respectively.

COURSE DESCRIPTIONS

CHEMISTRY

CHE 101. PRINCIPLES OF CHEMISTRY. (3) Prerequisite or corequisite: MAT 101 or 103. A principles-oriented course for science majors. Fundamental postulates and laws of chemistry; the relationship of atomic structure to physical and chemical properties of the elements. Two lecture hours and one recitation hour per week.

CHE 101L. PRINCIPLES OF CHEMISTRY LABORATORY. (1) Prerequisite or corequisite: CHE 101. Experimental investigations involving the fundamental postulates and laws of chemistry. One laboratory period of three hours per week.

CHE 102. PRINCIPLES OF CHEMISTRY. (3) Prerequisite: CHE 101. Continuation of CHE 101. Two lecture hours and one recitation hour per week.

CHE 102L. PRINCIPLES OF CHEMISTRY LABORATORY. (1) Prerequisites: CHE 101 and 101L. Prerequisite or corequisite CHE 102. Continuation of CHE 101L. One laboratory period of three hours per week.

CHE 103. GENERAL CHEMISTRY. (3) Designed primarily for non-science majors. Fundamentals of chemistry and selected topics from inorganic, organic, colloid, nuclear and biochemistry. Three lecture hours per week. (Credit for both 101L and 103L will not be given.)

CHE 103L. GENERAL CHEMISTRY LABORATORY. (1) Prerequisite or corequisite: CHE 103. Laboratory investigations into the nature of inorganic and organic compounds One laboratory period of three hours per week. (Credit for both 101L and 103L will not be given.)

CHE 104. GENERAL CHEMISTRY. (3) Designed primarily for non-science majors. Prerequisite: CHE 103. Continuation of CHE 103 including qualitative analysis. Three lecture hours per week. (Credit for both 102 and 104 will not be given.)

CHE 104L. GENERAL CHEMISTRY LABORATORY. (1) Prerequisites: CHE 103 and 103L. Prerequisite or corequisite: CHE 104. Continuation of CHE 103L including qualitative analysis. One laboratory period of three hours per week. (Credit for both 102L and 104L will not be given.)

CHE 225. INORGANIC CHEMISTRY. (3) Prerequisite: CHE 102. Descriptive inorganic chemistry including acid-base and non-aqueous solvent concepts. Three lecture hours a week.

CHE 231. ORGANIC CHEMISTRY. (3) Prerequisite: CHE 102. Descriptive principles and techniques of organic chemistry and their applications to reactions of aliphatic and aromatic compounds and natural products. Three lecture hours per week.

CHE 231L. ORGANIC CHEMISTRY LABORATORY. (1) Prerequisites: CHE 102 and CHE 102L. Prerequisite or corequisite: CHE 231. Laboratory investigations into the physical and chemical properties of organic compounds. One laboratory period of three hours per week.

CHE 232. ORGANIC CHEMISTRY. (3) Prerequisite: CHE 231. Continuation of CHE 231. Three lecture hours per week.

CHE 232L. ORGANIC CHEMISTRY LABORATORY. (1) Prerequisites: CHE 231 and 231L. Prerequisite or corequisite CHE 232. Continuation of CHE 231L. One laboratory period of three hours per week.

CHE 311. QUANTITATIVE ANALYSIS. (4) Prerequisite: CHE 102, 102L. Introductory course in quantitative analytical chemistry. Principles of equilibrium, classical and simple instrumental approaches are considered. Two lecture hours and two laboratory periods of three hours each a week.

CHE 312. BIORGANALYTICAL CHEMISTRY. (4) Prerequisites: Chemistry 231, 231L and 311. Introductory course in modern analytical methods, with laboratory applications emphasizing experiments in organic chemistry, biochemistry and chemical aspects of the life sciences. Two lecture hours and two laboratory periods of three hours each week.

CHE 341. PHYSICAL CHEMISTRY. (4) Prerequisites: CHE 102, 102L, PHY 231 and 252. Corequisite: MAT 271. The application of classical thermodynamics and the phase rule to chemical equilibrium; electrochemistry; the kinetic theory of gases and elements of statistical mechanics applied to chemical processes; atomic and molecular structure interpreted in quantum mechanical terms. Three lecture hours and one laboratory period of three hours per week. (Credit for both 341 and 345 will not be given.)

CHE 342. PHYSICAL CHEMISTRY. (4) Prerequisite: CHE 341. Continuation of CHE 341. Three lecture hours and one laboratory period of three hours a week. (Credit for both 342 and 346 will not be given.)

CHE 345. PHYSICAL CHEMISTRY. (3) Prerequisite: consent of the instructor. Same course as CHE 341 but taught without the laboratory. Three lecture hours a week. (Credit for both 341 and 345 will not be given.)

CHE 346. PHYSICAL CHEMISTRY. (3) Prerequisite: CHE 341 or 345. Same course as CHE 342 but taught without the laboratory. Three lecture hours a week. (Credit for both 342 and 346 will not be given.)

CHE 375. INTRODUCTORY BIOCHEMISTRY. (3) Prerequisite: CHE 232. The chemical constitution of living matter; biochemical processes. Three lecture hours per week.

CHE 390. SPECIAL TOPICS IN CHEMISTRY. (1-4) Prerequisite: consent of department. May be repeated for credit. Lecture and/or laboratory hours will vary with the nature of the course taught. Topics chosen from analytical, biochemistry, inorganic, organic and physical chemistry.

CHE 397. INTERNSHIP IN COMMUNITY EDUCATION AND SERVICE. (3) Prerequisites: junior standing, acceptance into the program and approval of the department. A project oriented, service learning internship with cooperating community organizations. Credit toward the B.A. and B.S. degrees in chemistry will not be given for this course. May be repeated for credit with permission of the Chemistry Department. This course is offered on a pass/no-credit basis only.

CHE 411. INSTRUMENTAL ANALYSIS. (4) Prerequisites: CHE 311 and 341. A discussion of modern electrochemical and chromatographic techniques and of ultraviolet, infrared, NMR, ESR, Raman and mass spectroscopy. The discussion includes theory and practice, with considerable attention given to the instrument and elementary electronics involved in the techniques. Two lecture hours and two three hour laboratory periods a week.

CHE 421. ADVANCED INORGANIC CHEMISTRY. (4) Prerequisite: CHE 342. Theoretical inorganic chemistry including the application of physico-chemical principles to the study of inorganic systems. Laboratory work involves inorganic preparations and characterization techniques. Three lecture hours and one laboratory period of three hours a week.

CHE 431. ADVANCED ORGANIC CHEMISTRY. (4) Prerequisites: CHE 232, 232L and 311. Recent developments in organic chemistry. Laboratory techniques of organic chemistry with emphasis on qualitative organic analysis including instrumental methods. Two lecture hours and two laboratory periods of three hours each week.

CHE 445. ADVANCED PHYSICAL CHEMISTRY. (3) Prerequisite: CHE 342. Topics selected from quantum chemistry and/or statistical thermodynamics. Three lecture hours per week.

CHE 475. PHYSICAL BIOCHEMISTRY. (3) Prerequisites: CHE 232, 232L and 341 or 345. Colloid systems, equilibria in biological fluids, mass and energy transport in fluids and in association with membranes, energy storage and dissipation with relation to specific chemical bonding, enzyme kinetics. Three lecture hours per week.

CHE 490. INDEPENDENT STUDY AND RESEARCH. (1 to 4) Prerequisites: CHE 232, 232L, 342 and 411. Independent study and research. A senior project in any of these fields of chemistry: organic, physical, analytical, inorganic chemistry or biochemistry; introduction to research. Hours in consultation, library and laboratory to be determined. May be repeated for credit.

CHE 495. CHEMISTRY SEMINAR. (1) Prerequisite: senior standing. Discussion of recent developments in chemistry. Written and oral reports will be submitted.

CHE 496. CHEMISTRY SEMINAR. (1) Prerequisite: senior standing. Continuation of CHE 495.

CHE 590. SPECIAL TOPICS IN CHEMISTRY. (1-4) Prerequisite: consent of department. May be repeated for credit. Lecture and/or laboratory hours will vary with the nature of the course taught. Selected topics in chemistry.

DEPARTMENT OF MATHEMATICS

Chairman: Professor Schell
Professors: Embry, Goodrum, Nixon
Associate Professors: Lambert, Schurle
Assistant Professors: Allen, Abdel-Hameed, Hedstrom, Houston, Johnson, Ju, Leiva, Lucas, Malmgren, Niccolai, Pellerin, Quinn, Reiter, Roth, Stavrakas, Stewart, Wichnoski, Wright
Lecturers: Benson, Greene
Lecturers (Part-time): Davis, Pellerin, Priebe, Quinn, Reiter

A major in mathematics for the B.A. degree consists of 27 semester hours of mathematics courses numbered 140 and above and approved by the department. Related work must be approved by the department.

A major in mathematics for the B.S. degree consists of 39 semester hours of mathematics courses numbered 140 and above and approved by the department. Related work must be approved by the department. A student planning to study mathematics in graduate school should take French, German or Russian.

An entering freshman who plans to take Mathematics 141, in particular a mathematics major, will first enroll in Mathematics 103, unless exempted by the department. It is recommended that a prospective freshman major enroll in this course during the summer session immediately preceding his freshman year.

Specific requirements for the B.A. and B.S. degree will vary with the specific objectives of the student. Some objectives which are possible are: graduate work, applied mathematics, statistics, computer science, elementary or secondary education.

CURRICULUM OUTLINE FOR THE B.A. DEGREE IN MATHEMATICS

FRESHMAN YEAR

Mathematics 141	4	Mathematics 142	4
English 101	3	English 102	3
Social Science	3	Social Science	3
Language (Or Elective)	4(3)	Language (Or Elective)	4(3)
	14 (13)		14 (13)

SOPHOMORE YEAR

Mathematics 241	3	Mathematics 264	3
Mathematics 263	3	Humanities	3
Humanities	3	Science	4
Science	4	Related Work	3
Related Work	3	Elective	3
	16		16

JUNIOR YEAR

Mathematics 2xx or higher	3	Mathematics 3xx or 4xx	3
Related Work	3	Related Work	3
Electives	9	Electives	9
	15		15

SENIOR YEAR

Mathematics 3xx or 4xx	3	Mathematics 3xx or 4xx	3
Related Work	3	Related Work	3
Electives	10	Electives	8-10
	16		14-16

CURRICULUM OUTLINE FOR THE B.S. DEGREE IN MATHEMATICS

FRESHMAN YEAR

Mathematics 141	4	Mathematics 142	4
English 101	3	English 102	3
Social Science	3	Social Science	3
Language (Or Elective)	4(3)	Language (Or Elective)	4(3)
	14(13)		14(13)

SOPHOMORE YEAR

Mathematics 241	3	Mathematics 271	3
Mathematics 263	3	Mathematics 264	3
Humanities	3	Humanities	3
Science	4	Science	4
Related Work	3	Related Work	3
	16		16

JUNIOR YEAR

Mathematics 2xx or higher	6	Mathematics 341	3
Science	4	Mathematics 3xx or 4xx	3
Related Work	3	Related Work	3
Electives	3	Electives	6
	16		15

SENIOR YEAR

Mathematics 3xx or 4xx	6	Mathematics 3xx or 4xx	6
Related Work	3	Related Work	3
Electives	6	Electives	5-7
	15		14-16

COURSE DESCRIPTIONS

MATHEMATICS

MAT 101. BASIC CONCEPTS OF MATHEMATICS. (3) Algebraic properties of the real number system; sets, relations, functions; graphing and solution of equations and inequalities; vectors and matrices; introduction to linear programming. (Credit not given to students having credit for MAT 103.)

MAT 103. CONCEPTS OF MATHEMATICS. (3) A study of the real number system including the basic field operations, the order relation and absolute value; solutions of equations and inequalities; sets, functions and relations; graphing; brief treatment of trigonometry. (Credit not given for Mathematics 101 or 103A where credit is awarded for Mathematics 103.)

MAT 103A. CONCEPTS OF TRIGONOMETRY. (1) Prerequisite: placement by the Department of Mathematics. A brief study of the trigonometric functions; trigonometric identities; solution of equations and triangles; graphs of trigonometric functions. (Credit not given for both Mathematics 103 and 103A).

MAT 105. COMPUTATIONAL MATRIX ALGEBRA. (1) Prerequisite: none. An introduction to the solution of systems of linear

algebraic equations. Basic properties of matrices and determinants will be introduced and several methods of solution for linear algebraic systems will be developed. The computational efficiency of the solution techniques will be compared. Further topics to include the algebra of complex numbers; two and three dimensional vector algebra, inner product and vector cross product. One lecture and one laboratory meeting per week.

MAT 120. CALCULUS. (3) Prerequisite: MAT 101 or 103. A brief treatment of basic concepts of differential and integral calculus with applications to business and to social and life sciences; polynomial, exponential and logarithmic functions.

MAT 122. ELEMENTS OF STATISTICS. (3) Prerequisite: MAT 101 or 103. An introduction to the principles of statistical measures and hypothesis testing. Mean, variance, standard deviation; confidence invervals; binomial and normal distributions; contingency tables, chisquare test; nonparametric tests including the sign test and rank sum test, the t-test; linear regression, correlation and an introduction to analysis of variance and multiple regression.

MAT 130. ELEMENTARY SCHOOL MATHEMATICS I. (3) A logical treatment of the structure of the number system and the basic ideas needed for teaching elementary school mathematics with emphasis on the concepts involved rather than the algorithms. (For elementary teacher candidates only.)

MAT 131. ELEMENTARY SCHOOL MATHEMATICS II. (3) Prerequisite: Mathematics 130. A continuation of Mathematics 130 with additional study in informal geometry.

MAT 141. DIFFERENTIAL AND INTEGRAL CALCULUS I. (4) Prerequisite: MAT 103. Limits, continuity of R→R functions; differentiation and integration of rational functions; extreme values; concavity; curve sketching; velocity and acceleration; area; volumes of rotation; work; arc length.

MAT 142. DIFFERENTIAL AND INTEGRAL CALCULUS II. (4) Prerequisite: MAT 141 with a grade of *C* or better. Differential and integral calculus of transcendental functions (trigonometric, inverse trigonometric, exponential and logarithmic functions); methods of integration and further applications; indeterminate forms, improper integrals, series.

MAT 221. INTRODUCTION TO PROBABILITY. (3) Prerequisite: MAT 101 or 103. A study of the elements of probability theory. Sample spaces, events, probability of an event, conditional probability, independent events. Random variable, mean, variance and standard deviation, joint probability functions, independent random variables, sampling covariance and correlation, Binomial distribution and hypothesis testing.

MAT 241. DIFFERENTIAL AND INTEGRAL CALCULUS III. (3) Prerequisite: MAT 142 with a grade of *C* or better. Introduction to vector geometry; differential calculus of several variables, multiple integration; line integrals.

MAT 263. INTRODUCTORY MODERN ALGEBRA. (3) Prerequisite: MAT 103. The content is chosen to emphasize the axiomatic approach to algebraic structures through many concrete examples taken from rings, finite fields, polynomials and groups. The course is intended to familiarize the student with algebraic structures by emphasizing that abstract concepts arise from the analysis of concrete situations. It will also enhance transitions to more advanced algebra courses.

MAT 264. MATRICES AND LINEAR ALGEBRA. (3) Prerequisite: MAT 103. This course will emphasize the following topics: algebra of matrices, solutions of linear equations, abstract vector spaces, determinants, similarity of matrices, inner products and unitary similiarity, quadratic forms. This course is intended to provide a firm foundation and working knowledge of these areas and will be of particular value to engineering and science majors as well as mathematics majors.

MAT 271. DIFFERENTIAL EQUATIONS. (3) Prerequisite: MAT 142 with a grade of *C* or better. An introduction to the study of differential equations; first order equations; general theory of ordinary linear differential equations; Laplace transform.

MAT 311. OPERATIONS RESEARCH I. (3) Prerequisite: MAT 120 and 122 with a grade of *C* or better. The first course of a two-semester sequence, including matrix algebra, convex sets, linear programming, queuing and the theory of games.

MAT 312. OPERATIONS RESEARCH II. (3) Prerequisite: MAT 311. A continuation of MAT 311.

MAT 322. PROBABILITY AND STATISTICS I. (3) Prerequisite: MAT 241 with a grade of *C* or better. A first course in a two-semester sequence including continuous probability distributions, random variables, limit theorems, stochastic processes, estimation and hypothesis testing.

MAT 323. PROBABILITY AND STATISTICS II. (3) Prerequisite: MAT 322. A continuation of MAT 322.

MAT 341. CALCULUS OF ONE VARIABLE. (3) Prerequisites: MAT 241 and junior standing. Least upper bound principle; sequences; sequences of functions; topology of the real line; continuity and uniform continuity of functions; differential calculus; Riemann integration.

MAT 346. INTRODUCTION TO COMPLEX ANALYSIS. (3) Prerequisite: MAT 241 with a grade of *C* or better. Analytic function theory; complex integration; sequences; series; residue calculus and conformal mapping.

MAT 350. TOPICS IN MATHEMATICS. (2-3 semester hours credit. May be repeated for additional credit with the approval of the department.) Prerequisite: consent of the department. Topics chosen from such fields as set theory, linear algebra, geometry and probability. This course is designed to serve particular needs not served by other departmental offerings.

MAT 360. TOPICS IN ALGEBRA. (3) Prerequisites: junior or senior standing and consent of the department. Among the topics which may be offered to introduce the student to a more specialized algebraic topic are: Galois theory, algebraic logic, group theory, rings and modules, algebraic number theory, category theory, group representation, algebraic curves, combinatorial theory, graph theory.

MAT 361. LINEAR ALGEBRA. (3) Prerequisite: MAT 241 or consent of the department. Abstract vector spaces, linear transformations and matrix representations, direct-sum decompositions and canonical forms.

MAT 362. NUMBER THEORY. (3) Prerequisite: consent of the department. Introductory topics from the theory of rational and algebraic integers.

MAT 363. MODERN ALGEBRA I. (3) Prerequisite: MAT 263 or consent of department. The first course of a two-semester sequence covering groups, rings, fields extensions, roots of polynomials and the rudiments of Galois theory.

MAT 364. MODERN ALGEBRA II. (3) Prerequisite: MAT 363. A continuation of MAT 363.

MAT 371. APPLIED MATHEMATICS I. (3) Prerequisite: MAT 271 and 241 with grades of *C* or better. Boundary value problems, separation of variables, Fourier series and Fourier transforms, orthogonal functions.

MAT 372. APPLIED MATHEMATICS II. (3) Prerequisite: MAT 371 with a grade of *C* or better. A continuation of MAT 371.

MAT 376. NUMERICAL ANALYSIS. (3) Prerequisites: Computer Science 100, MAT 241 and 271. A treatment of the numerical solution of initial value and boundary value problems in ordinary differential equations. An introduction to the numerical solution of partial differential equations. Direct and iterative methods of solving systems of equations will be developed. Selected problems will be programmed for computer solution.

MAT 381. FUNDAMENTAL CONCEPTS OF GEOMETRY. (3) Prerequisites: MAT 103 and 264 and consent of the department. Foundations of geometry, affine geometry, comparison of Euclidean and non-Euclidean geometries.

MAT 383. INTUITIVE TOPOLOGY. (3) Prerequisite: MAT 241. Introduction to combinatorial topology; topology of E^n ; winding number and applications; homotopies and the fundamental group.

MAT 391. SEMINAR. (1-6) Prerequisite: consent of the department. Readings, study and discussion designed to develop the student's ability to study independently and to present his results properly.

MAT 392. SEMINAR. (1-6) Prerequisite: consent of the department. A continuation of MAT 391.

MAT 403. ARITHMETIC IN THE SCHOOL. (3) Prerequisite: MAT 101 or equivalent. A study of the number systems with emphasis placed upon the basic concepts and meanings, properties of addition, multiplication, inverses, systems of numeration, and number line appropriate for each grade. (Does not count toward a major in mathematics. Open only to transfer students who have completed six semester hours of mathematics at another university.)

MAT 409. HISTORY OF MATHEMATICAL THOUGHT. (3) Prerequisite: consent of the department. A study of the development of mathematics in its historical setting from the earliest beginnings to modern times.

MAT 443. ANALYSIS I. (3) Prerequisite: MAT 341 with a grade of *C* or better or consent of department. An introduction to metric spaces, including properties of subsets, continuity of functions, pointwise and uniform convergence of functions.

MAT 444. ANALYSIS II. (3) Prerequisite: MAT 443. An introduction to Lebesgue integration and measure theory, starting with a construction of measure for closed and bounded intervals of R and extending to an axiomatic treatment of a general measure on abstract spaces.

MAT 450. SELECTED TOPICS IN MATHEMATICS. (2-3) Prerequisite: consent of the department. Topics chosen from such fields as topology, differential geometry, complex analysis, applied mathematics, or modern algebra. May be repeated for credit with the approval of the department.

MAT 481. INTRODUCTION TO TOPOLOGY. (3) Prerequisite: MAT 383 or 341. Topics from set theory and point set topology such as cardinality, order, topological spaces, metric spaces, separation axiom, compactness and connectedness.

MAT 491. SEMINAR. (1-6) Prerequisite: consent of the department. Individual investigation and appropriate exposition of the results.

MAT 492. SEMINAR. (1-6) Prerequisite: consent of the department. A continuation of MAT 491.

The Honors Program in Mathematics

The overall purpose of this program is to stimulate the imagination of the student by encouraging independent study and by freeing him to a certain extent from the more structured program which leads to a B.A. or B.S. in Mathematics. The program in honors will be kept as flexible as possible to allow students with different interests and abilities to benefit from it.

Any student may request entrance into the honors program at any time. A student in any one of the honors courses shall receive a grade of *Pass Honors, Pass* or *No Credit.* He shall receive four hours credit for a Junior Honors Seminar if he has received a grade of *Pass Honors* and shall receive six hours credit for a Senior Honors Tutorial if he has received a grade of *Pass Honors.* The minimum required to obtain Honors in Mathematics is participation in two semesters of the Senior Honors Tutorial with a grade of *Pass Honors,* completion of a thesis and examination of the candidate by the Honors Committee of the Department of Mathematics upon his honors work.

MAT 190 H. FRESHMAN HONORS SEMINAR. (2) Prerequisite: consent of the department. An introduction to independent study.

MAT 290 H. SOPHOMORE HONORS SEMINAR. (2) Prerequisite: consent of the department. Further independent study.

MAT 390 H. JUNIOR HONORS SEMINAR. (2) Prerequisite: consent of the department. (May be repeated once for additional credit with approval of the department.

MAT 490 H. SENIOR HONORS TUTORIAL. (3) Prerequisite: consent of the department. Individual tutorials in which the student will pursue independent study and research in any area of mathematics under the direction of one or more faculty members. The project of the student will be planned to culminate in a research paper of original or expository nature.

COMPUTER SCIENCE

Since 1969 a modern computing center has been in operation on the campus of the University of North Carolina at Charlotte. The University is equipped with a Burroughs B5500 system.

Ten courses (30 credit hours) are offered in computer science and may form part of a major in mathematics or may be taken as related work. At present, these courses are taken by students for a variety of reasons which include the following:

a) To prepare for work in computer or data processing vocations.

b) To obtain a minor in computer science toward a degree in engineering, in business, etc.

c) To prepare for entrance into graduate work in computer science or related areas.

d) To assist studies in areas where the computer can be used to reduce the drudgery of repeated calculations.

e) To provide an appreciation of capabilities and limitations of computers in an "information oriented age" as a part of a student's general education.

COURSE DESCRIPTIONS

COMPUTER SCIENCE

CSC 100. ALGORITHMIC LANGUAGES I. (3) Prerequisite: MAT 101 or 103. An introduction to digital computing techniques through the study of FORTRAN IV. Various numerical and non-numerical algorithms will be studied, flowcharted, programmed and documented. Concepts such as computer hardware, computer application areas, etc. will be introduced when appropriate. Two lecture hours and two laboratory hours per week.

CSC 101. INTRODUCTION TO COMPUTERS. (3) (Cannot be taken for credit if CSC 100 is taken for credit). Covers the development of the digital computer and its applications. Specific topics include: flow-charting, data representation, card readers, printers, disks tapes central processing units, batch processing, time-sharing, recent hardware and software developments and an introduction to a programming language and use of packaged routines.

CSC 201. COMPUTERS AND PROGRAMMING. (3) Prerequisite: CSC 100. Computer structure; symbolic coding, and assembly systems; macros; program segmentation and linkage; and an introduction to operating systems.

CSC 202. ALGORITHMIC LANGUAGES II. (3) Prerequisite: CSC 100, MAT 120 or MAT 141. A continuation of CSC 100. Numeric and nonnumeric algorithms in the procedural languages, COBOL, PL/I, etc.; discussion and comparison of the relative strengths and weaknesses of the major languages and appropriate areas of application. Two lecture hours and two laboratory hours per week.

CSC 223. INTRODUCTION TO NUMERICAL METHODS. (3) Prerequisites: CSC 100 and MAT 142. Solutions of equations; interpolation and approximations; introduction to sequences and series; numerical differentiation and integration; and numerical solution of initial value problems in differential equations. Selected algorithms will be programmed for the digital computer. Two lecture hours and two laboratory hours per week.

CSC 273. LOGIC AND ALGORITHMS. (3) Prerequisite: MAT 101 or 103. Set algebra; elements of the theory of graphs; Boolean Algebra; propositional logic; and Markov Algorithms and Turing machines.

CSC 341. COMPUTER ORGANIZATION. (3) Prerequisite: CSC 201. Basic digital circuits; data representation and transfer; digital storage and accessing; control functions; input/output facilities; and system organizations. Multiprogramming, multiprocessing and real time systems will be included and features necessary for each.

CSC 342. INFORMATION STRUCTURES. (3) Prerequisites: CSC 201 and 273. Description of a data base and its structure; concepts of records, files, trees and lists; sorting, searching and merging of information files; referencing and cross referencing of files.

CSC 343. SYSTEMS PROGRAMMING. (3) Prerequisite: CSC 201. Batch systems programs, components, operating characteristics; parallel processing of input-output and interrupt handling; structure of multiprogramming systems; addressing techniques, core management, file system design, etc.

CSC 350. TOPICS IN COMPUTER SCIENCE. (3) Prerequisite: consent of the department. This course is designed to meet particular needs, not served by other departmental offerings. May be repeated for credit with the approval of the department.

DEPARTMENT OF PHYSICS

Chairman: Professor Pollak
Associate Professors: Mayes, Oberhofer, Vermillion
Assistant Professors: Corwin, Melton
Lecturer (Part-time): Bailey

A major in physics leading to the B.A. degree consists of a minimum of 120 semester hours which fulfill the general degree requirements of the University. A minimum of 32 semester hours in physics with an average grade of *C* in the major area is required. The minimum 32 hours must include Physics 221, 222, 231, 241, 251, 252, 291, 491 and at least nine additional hours at the 300/400 level.

A major in physics leading to the B.S. degree consists of a minimum of 120 semester hours which fulfill the general degree requirements of the University. A minimum of 43 semester hours in physics with an average grade of *C* in the major area is required. The minimum 43 hours must include Physics 221, 222, 231, 241, 251, 252, 291, 321, 331, 341, 351, 361 or 371, 491 and at least six additional hours at the 300/400 level to be approved by the department.

For either program a first-year sequence of Physics 101 and 102, or Chemistry 101 and 102 is recommended. Students should note that Mathematics 141, 142, 241, 271 or their equivalents are prerequisites for various required physics courses. Freshmen should arrange their mathematics schedule so as to complete Math 141 before beginning the sophomore year.

PHYSICS

Astronomy

PHY 103. INTRODUCTION TO ASTRONOMY. (4) Historical beginnings of astronomy. Motions of celestial bodies. Introduction to space science. The solar system. Optical and radio astronomy. Structure and evolution of stars. Galaxies, cosmology. Three hours lecture and one three-hour laboratory each week.

Physics

PHY 101. INTRODUCTORY PHYSICS I. (4) Introduction to the fundamental principles of natural phenomena. Topics will be selected from traditional classical subjects (e.g., Newtonian mechanics, electromagnetism) and more recent developments in order to illustrate the logical structure of modern science. Three lecture hours and one three-hour laboratory each week.

PHY 102. INTRODUCTORY PHYSICS II. (4) Prerequisite: PHY 101. A continuation of PHY 101. Three lecture hours and one three-hour laboratory each week.

PHY 105. BASIC CONCEPTS AND TEACHING METHODS IN PHYSICAL SCIENCE. (4) Intended primarily for students in elementary education. Content, processes and attitude of science are explored, along with methods for teaching science to children. Topics include basic scientific concepts such as energy, interaction, relativity of motion, scientific model, as well as teaching strategies and their relationship to theories of learning and development, such as Piaget's theory. May not be counted toward the eight hour general degree requirement in natural science. Six laboratory/class hours per week.

PHY 221. DYNAMICS. (3) Prerequisite: MAT 141. Kinematics and dynamics of particles; momentum, work, energy; conservation laws, mechanics of rigid bodies. Three lecture hours a week.

PHY 222. WAVES AND THERMAL PHYSICS. (3) Prerequisites: PHY 221 or ESM 241; MAT 241. Fluid mechanics and elastic properties of matter; oscillations and waves in elastic media; sound; heat and an introduction to thermodynamics and the kinetic theory of gases. Three lecture hours a week.

PHY 231. ELECTRICITY AND MAGNETISM. (3) Prerequisites: PHY 221 or 222; MAT 142. Electric and magnetic fields in free space and in matter; electrostatic potential and capacitance; elementary circuit theory; electromagnetic induction and inductance; introduction to Maxwell's equations. Three lecture hours a week.

PHY 241. INTRODUCTION TO MODERN PHYSICS. (3) Prerequisites: PHY 102 or PHY 231; MAT 120 or MAT 141. An introduction to such topics as the atomic structure of matter, quantum physics, electronic structure of atoms, wave nature of matter, physics of the solid state, nuclear structure, radioactive decay, fission and fusion, and special relativity. Three lecture hours a week.

PHY 251. EXPERIMENTAL PHYSICS I. (1) Corequisite: PHY 221. The first course of a laboratory sequence developing toward open-ended experiments designed to illustrate physical principles, to develop experimental technique and to encourage individual investigation by the student. PHY 251 involves chiefly experiments in classical mechanics. One three-hour laboratory each week.

PHY 252. EXPERIMENTAL PHYSICS II. (2) Prerequisite: PHY 251. Corequisite: PHY 231. Experiments in electricity and magnetism. One three-hour laboratory each week.

PHY 290. SEMINAR I. (0) Films, lectures, demonstrations and reports on recent developments in physics, historical reviews of specific areas, student and faculty projects or research. A term paper or other presentation may be required. Meets once every other week. May be repeated.

PHY 291. SEMINAR II. (1) Prerequisite: PHY 290. Continuation of PHY 290. A term paper or other presentation will be required in most cases. May be repeated for up to two hours of credit.

PHY 311. A.C. CIRCUITS AND ELECTRONICS. (4) Prerequisites: PHY 231 and PHY 252. An introduction to A.C. circuit theory and electronics with an emphasis on the function and behavior of the individual components of an electronic circuit. Two hours of lecture and one three-hour laboratory each week.

PHY 321. CLASSICAL MECHANICS I. (3) Prerequisites: PHY 221; MAT 241 and 271. The first course of a two-semester sequence treating particle dynamics, the motion of systems of particles, rigid body motion, moving coordinate systems, Lagrange's equations, Hamilton's equations and small oscillations. Three lecture hours a week.

PHY 331. ELECTROMAGNETIC THEORY I. (3) Prerequisites: PHY 231; MAT 241 and 271. The first course of a two-semester sequence. Topics considered include electrostatics and magnetostatics in free space and in matter, the motion of charged particles in electric and magnetic fields, capacitance, dielectric theory, field energy, electromagnetic induction and inductance, vector and scalar potentials, magnetic properties of matter, Maxwell's equations, solutions of Maxwell's equations in free space and in matter, propagating electromagnetic waves, and boundary value problems. Three lecture hours a week.

PHY 341. QUANTUM PHYSICS I. (3) Prerequisites: PHY 231 and 241, MAT 241 and 271, or consent of the department. Empirical necessity for quantum physics. Postulates of quantum physics.

Analytical study of quantum physics of the atom. Three lecture hours a week.

PHY 345. STATISTICAL PHYSICS. (3) Prerequisite: PHY 231 and 241, or consent of the department. Introduction to the microscopic foundations for macroscopic systems. Kinetic theory and introductory statistical mechanics. Three lecture hours a week.

PHY 351. ADVANCED LABORATORY IN WAVES AND OPTICS. (2) Prerequisites: PHY 252. Selected laboratory work primarily in geometrical optics, physical optics and microwaves. Three hours of laboratory each week.

PHY 361. ADVANCED LABORATORY IN MODERN PHYSICS. (2) Prerequisites: PHY 241 and PHY 252, or PHY 241 and consent of department. Selected laboratory work in such areas as atomic spectra, radioactive decay, interaction of radiation with matter and the photoelectric effect. Three hours of laboratory each week.

PHY 371. ADVANCED LABORATORY IN MECHANICS. (2) Prerequisites: PHY 252. Selected laboratory work in the area of classical mechanics developing toward open-ended experiments. Topics are chosen for their relation to important principles and techniques or for their historical significance. Three hours of laboratory each week.

PHY 395. TOPICS IN PHYSICS. (0-4 semester hours credit. May be repeated with approval of the department.) Prerequisite: consent of the department. Used to comply with requests for special topics which are introductory in nature.

PHY 397. INTERNSHIP IN COMMUNITY EDUCATION AND SERVICE. (3) Prerequisites: junior standing, acceptance into the internship program, and approval by the Physics Department. Corequisite: SBS 398. A project oriented, service-learning internship with cooperating community organizations. Credit toward departmental requirements in physics will not be granted for this course. May be repeated once with permission of the Physics Department. This course is offered on a pass/no-credit basis.

PHY 411. NUCLEAR PHYSICS. (3) Prerequisites: PHY 231 and 241 and MAT 271. A study of the nucleus, radioactivity, nuclear reactions, fission, fusion, interactions of radiation with matter, and measurement of radiation. Three hours lecture per week.

PHY 421. CLASSICAL MECHANICS II. (3) Prerequisite: PHY 321. Continuation of PHY 321. Three lecture hours a week.

PHY 431. ELECTROMAGNETIC THEORY II. (3) Prerequisite: PHY 331. Continuation of PHY 331. Three lecture hours a week.

PHY 441. QUANTUM PHYSICS II. (3) Prerequisite: PHY 341. Continuation of PHY 341 with selected applications from atomic, molecular, solid state and nuclear physics. Three lecture hours a week.

PHY 490. SEMINAR III. (0) Continuation of PHY 290 and 291. May be repeated.

PHY 491. SEMINAR IV. (1) Prerequisite: PHY 490. Continuation of PHY 490. May be repeated for up to two hours of credit.

PHY 495. SELECTED TOPICS IN PHYSICS. (0-4 semester hours credit. May be repeated with approval of the department.) Prerequisite: consent of the department. Used to comply with requests for more advanced special topics.

College of Social and Behavioral Sciences

Dean: Professor Schul

The College of Social and Behavioral Sciences includes the Law Enforcement and Administration Program, the Service Learning Internship Program, the Venture Program and the departments of Geography and Earth Sciences, Political Science, Psychology, and Sociology and Anthropology.

SERVICE-LEARNING INTERNSHIP PROGRAM

The service-learning Internship Program in Community Education and Service is designed as an area-wide academic program with credit in the College of Social and Behavioral Sciences.

The following are the overall objectives of the internship program:

—To identify relationships between the student's academic program and the problems and prospects of modern urban communities.

—To enable students to become involved in solving problems of the urban community.

—To provide manpower for governmental and service agencies in local metropolitan communities.

—To encourage youth to consider careers and/or citizen leadership in urban administration and service. To establish a closer relationship between institutions of higher education and the Charlotte area communities by making the resources of the University more accessible to the community and by providing a basis for keeping curriculum, teaching, and research relevant to the needs of the community and society.

Interns will receive six semester hours of academic credit, with grading on a *P/NC* basis, for their completion of the Program in Community Education and Service by enrolling in the following courses in the College of Social and Behavioral Sciences (SBS) at the University of North Carolina at Charlotte:

COURSE DESCRIPTIONS

SBS 397. INTERNSHIP IN COMMUNITY EDUCATION AND SERVICE. (3) Prerequisites: junior standing, acceptance into the program and approval of the student's major department. Corequisite: SBS 398. A project-oriented, service-learning internship with cooperating community organizations.

SBS 398. SEMINAR IN COMMUNITY EDUCATION AND SERVICE. (3) Corequisite: SBS 397 or participation in a service-learning situation approved by the College of Social and Behavioral Sciences. A forum for the analysis of needs in the urban community and the responses being generated to meet them. Interpreting the relationship between internship experiences in terms of the service-learning concept.

NOTE: The student intern's major department has the option of recognizing this credit as fulfilling departmental requirements and granting permission to repeat for credit. Student interns not regularly enrolled at the University of North Carolina at Charlotte are responsible for arranging for transfer of credit with their home institution. Student interns not regularly enrolled at the University of North Carolina at Charlotte should request in writing to be evaluated by a letter grade upon acceptance into the program if a letter grade is required by their home institution.

The Pass/No Credit evaluation does not apply against the four courses allowed on a Pass/No Credit option for UNCC students.

For further information concerning this program, contact the Office of the Dean, College of Social and Behavioral Sciences.

VENTURE PROGRAM

This program is an experiential learning process which attempts to meet several fundamental needs complementary to the student's education. It utilizes a wilderness setting and small-group dynamics in order to increase the student's understanding of self, interpersonal relationships and the environment.

COURSE DESCRIPTION

SBS 399-1 *Venture* (3) An Outward Bound-type of experience which utilizes a wilderness setting and small-group dynamics in order to increase the student's understanding of self-interpersonal relationships and the environment. The course is action-oriented with one experience building upon another. The emphasis is on an interdisciplinary approach.

NOTE: The student's major department has the option of recognizing this credit as fulfilling departmental requirements. Evaluation will be on a Pass/No Credit basis which does not apply against the four courses allowed on a Pass/No Credit option for UNCC students.

For further information concerning this program, contact the Office of the Dean, College of Social and Behavioral Sciences.

LAW ENFORCEMENT AND ADMINISTRATION PROGRAM

Director: Assistant Professor Adams

Students desiring the academic study of crime and the criminal justice system, or a career in the criminal justice field, may select the Law Enforcement and Administration Program leading to a B.S. degree. A major in Law Enforcement and Administration consists of an Associate degree, or 24 semester hours, in a criminal justice or police science program from a community college or technical institute and 30 semester hours in a designated interdisciplinary program emphasizing the social and behavioral sciences. Eighteen semester hours must be taken in a core program involving at least one course in political science, psychology and sociology, and two required courses—LEA 350 and LEA 351. The remaining 12 hours may be taken in either the core program or one of the three option areas: administration, social service or computer science.

A student may enter the Law Enforcement and Administration Program during the freshman and sophomore years but must enroll in at least 24 semester hours of criminal justice courses offered through transient study at an approved community college or technical institute.

COURSE DESCRIPTIONS

LAW ENFORCEMENT AND ADMINISTRATION

LEA 350. GENERAL CRIMINAL JUSTICE. (3) Prerequisite: junior standing. All components of the criminal justice system are reviewed and their interrelatedness assessed. Empirical descriptions and tests of the various segments of the system are covered. The role of criminal justice practitioners as professionals is discussed.

LEA 351. CRIMINAL JUSTICE THEORY AND RESEARCH. (3) Prerequisite: junior standing. The theoretical foundations underlying the components of the criminal justice system and their empirical tests are covered. The explanations of crime and delinquency from supporting disciplines, such as medicine, psychiatry, economics, sociology, psychology, political science and philosophy, and their empirical tests are reviewed and contrasted. Emphasis is placed on sources of criminal justice information and the skills involved in a thorough criminal justice literature review.

LEA 495. DIRECTED INDIVIDUAL STUDY IN CRIMINAL JUSTICE. (1-4). Prerequisite: junior standing, consent of the director and one 300-level LEA course. Supervised investigation of a criminal justice problem of special interest to the student. May be repeated for credit.

Completion of the Core and Options involves approved courses selected from the following six disciplines:

Computer Science
Economics

Human Development and Learning
Political Science
Psychology
Sociology

For additional information, write to: Director, Law Enforcement and Administration Program, University of North Carolina at Charlotte, UNCC Station, Charlotte, North Carolina 28223.

DEPARTMENT OF GEOGRAPHY AND EARTH SCIENCES

Chairman: Professor Stuart
Professor: Schul
Associate Professors: Clay, Nunnally, Orr
Assistant Professors: Bedford, Catau, Ingalls, Keller, Lord, Swanson, Walcott
Instructors: (part-time) Anderson, Kutsche, Simpson, Watson
Lecturer: Cooke

A major in Geography leading to the B.A. Degree consists of 28 hours of Geography and Earth Sciences and will include Geography 102, 201, 202 and 203 and Earth Science 101. Except for required courses, all work offered for the major must be in courses numbered 300 or above. Majors are expected to take additional work in computer science, economics, history, political science, sociology, and statistics or other related areas. Any student who wishes to pursue graduate study in Geography or to be recommended for non-teaching professional employment in the field should expect to take Geography 450.

Students who are working toward teacher certification may elect to take a modified program under which Geography 202 and 203 are not required and may be substituted for by any other six hours of 300 or higher numbered course work in Geography (but not in Earth Sciences).

COURSE DESCRIPTIONS

GEOGRAPHY

GGY 102. WORLD REGIONAL GEOGRAPHY. (3) A world regional study which emphasizes the distinctly human responses of man to various geographic situations throughout the world. The nature and development of cultural regions will be studied.

GGY 201. ECONOMIC GEOGRAPHY. (3) A study of the location and functioning of economic activity with an emphasis on physical and human geographic factors in analyzing patterns of production, exchange and consumption.

GGY 202. ELEMENTARY CARTOGRAPHY. Emphasis to be focused on tools of map making, map design and construction and the

interpretation of aerial photographs and topographic maps. One lecture hour and two laboratory periods of two hours a week.

GGY 203. INTRODUCTION TO GEOGRAPHIC RESEARCH. (3) An examination of research design and resources in geographic study including emphasis on spatial models and other quantitative tools applicable to geographic research.

GGY 301. GEOGRAPHY OF LATIN AMERICA. (3) A regional study of the basic human and physical differences from place to place which affect economic, social and political conditions of the Latin American countries.

GGY 302. GEOGRAPHY OF POLAR REGIONS. (3) A study of the Arctic and Antarctic regions with particular emphasis on the history of exploration, the physical environment and political significance.

GGY 303. GEOGRAPHY OF ANGLO-AMERICA. (3) The geographic structure of the United States and Canada with emphasis on both the physical environment and the patterns of human activities.

GGY 305. GEOGRAPHY OF EUROPE. (3) A regional study of geographic conditions and their relationship to economic, social and political problems of Europe.

GGY 308. GEOGRAPHY OF EAST ASIA. (3) A regional study emphasizing the relationships that exist between the physical environment and the cultural patterns in geographic regions of China, Korea, Japan and the nations of Southeast Asia.

GGY 309. GEOGRAPHY OF SOUTH AND SOUTHWEST ASIA. (3) A regional study emphasizing the relationships that exist between the physical environment and the cultural patterns in geographic regions of the Indian subcontinent and the Arabian peninsula.

GGY 311. POLITICAL GEOGRAPHY. (3) A study of the concepts of political geography as developed through topical studies of political phenomena as related to geographical features. Contemporary problems in international affairs will be considered.

GGY 313. MANUFACTURING GEOGRAPHY. (3) A study of factors relating to the nature, locations and development of manufacturing industries. Emphasis upon classification of manufactures, principal areas of manufacturing and the role of manufacturing in regional development.

GGY 314. RESOURCE PLANNING. (3) A study of the resources of the world, especially as they pertain to population, their use and misuse and present conservational practices as they relate to planning for future resource adequacy.

GGY 315. THE REGION AND PLANNING. (3) The regional concept and its application to urban and regional planning. Emphasis to be upon the techniques used in regional analysis.

GGY 316. GEOGRAPHY OF TERTIARY ACTIVITY. (3) A study of spatial attributes of retail and wholesome activities, service facilities and financial establishments. Emphasis upon location research and delineation of trade and service areas.

GGY 317. THE GEOGRAPHY OF TRANSPORTATION SYSTEMS. (3) The study of those geographical and human factors which affect the movement of goods and people from place to place. Emphasis will be placed on transportation routes and networks, commodity flow patterns and the locational implications of freight rates.

GGY 318. GEOGRAPHY OF PRIMARY ACTIVITIES. (3) A study of the functional and spatial attributes of primary economic activities, including agriculture, fossil fuels and other minerals, forestry and fisheries. Emphasis upon a models approach.

GGY 319. GEOGRAPHY OF INDUSTRIAL ACTIVITY. (3) The analytical study of the principles that affect the geographic distribution of manufacturing activity. Emphasis will be on theory, model building and the practical application of theory to geographic research. Also covered will be the role of industrial activity in regional development and planning. Although not required, students should generally plan to take GGY 313 first.

GGY 320. GEOGRAPHY OF URBAN SYSTEMS. (3) Study of the relationships between cities and the historical evolution of urban patterns.

GGY 321. GEOGRAPHIC STRUCTURE OF THE CITY. (3) An integrative study of the spatial structure of cities with emphasis on land use patterns and models, transportation systems, residential concentrations, commercial activities and manufacturing zones.

GGY 331. AIR PHOTO INTERPRETATION. (3) The examination and interpretation of aerial photographs with the aid of stereoscopes. Emphasis is to be placed on the identification of physical and cultural features and their patterns. One lecture hour and two laboratory periods of two hours a week.

GGY 332. ADVANCED CARTOGRAPHY. (3) Prerequisite: GGY 202. Preparation of maps, figures and charts at a professional level of competence. Techniques to be emphasized include scribing and various related photographic processes in addition to conventional pen and ink methods. Two laboratories of three hours each week.

GGY 350. ADVANCED GEOGRAPHIC ANALYSIS. (3) Prerequisite: GGY 203 or consent of instructor. An examination of advanced analytical methods in geography. The course will include multi-variate analysis and complex spatial models. Course will include computer usage.

GGY 402. SELECTED TOPICS IN GEOGRAPHY. (3) Prerequisite: consent of instructor. An intensive study of topics in geography. Topics will be offered from such areas as urban, manufacturing, tertiary activity, transportation, primary activity and political geography. Topics will vary from semester to semester. May be repeated for credit.

GGY 450. INDIVIDUAL STUDY IN GEOGRAPHY. (1-4) Permission of department must be obtained and credit hours established in advance. May be repeated for credit. Tutorial study or special research problems.

EARTH SCIENCE

ES 101. EARTH SCIENCE-GEOGRAPHY. (4) A study of basic geographical principles and processes in earth science; the earth—its position and motions; the grid system; weather; climate; the waters; soils; and vegetation. Three lecture hours and one period in the audio-visual-tutorial lab every week.

ES 102. EARTH SCIENCE-GEOLOGY. (4) A study of the basic geological principles and processes in earth science; the earth as a planet; treatment of physical processes shaping the earth; earth materials and landforms. Three lecture hours and one laboratory period of two hours a week.

ES 340. FIELD METHODS IN THE EARTH SCIENCES. (3) Prerequisite: ES 101 and 102 or consent of instructor. Introduction to field techniques used in geology, geomorphology, hydrology, soil science and vegetation surveys. Two hours of lecture and one three-hour lab per week.

ES 341. NATURAL ENVIRONMENTS OF NORTH AMERICA. (3) A study of the physiographic regions of the United States, the genesis and pattern of the major landforms included within each, their distinctive characteristics and their cartographic interpretation.

ES 342. METEOROLOGY. (3) An introduction to atmospheric phenomena, weather producing processes, weather forecasting and weather effects upon man's activities.

ES 343. WEATHER ANALYSIS LABORATORY. (1) Pre-or corequisite: ES 342 or consent of instructor. An introduction to weather observation and techniques of weather forecasting. One two-hour lab per week.

ES 345. MICROCLIMATE: URBAN ENVIRONMENTS. (3) ES 101 or introductory physics are recommended. Principles of micrometeorology/climatology using examples from urbanized areas. Analysis of local-scale climates and man-made modification of these environments.

ES 346. CLIMATOLOGICAL DATA ANALYSIS. (1) Prerequisite: GGY 203 or Statistics. Pre- or corequisites: ES 342 or ES 345 or ES 347 or consent of instructor. Methods of acquiring and analyzing climatological data in various types of applied problems. One two-hour lab per week.

ES 347. GLOBAL CLIMATES. (3) The global pattern of climates and climate producing factors. Climatic effects in relation to man and man's effect upon climate.

ES 350. MINERALS AND ROCKS. (4) Formation processes, composition and identification of rocks and minerals in the earth's crust with important abundance or special use. Three lecture and one lab two hours per week.

ES 351. HISTORICAL GEOLOGY. (4) Prerequisite: ES 102. The history of the earth from its beginning to the present. The study of successive faunal and floral assemblages as they appear in the rock record. Three lecture hours and one laboratory period of two hours a week.

ES 355. GEOLOGICAL MAPPING AND INTERPRETATION. (4) A field-oriented study of the principles of structural geology and lithology. Prerequisite: ES 102 and ES 350. Two lecture hours and four laboratory hours per week.

ES 361. GEOMORPHOLOGY. (4) Prerequisite: ES 102. Treatment of the processes shaping the earth's surface, genesis of land forms, and the theories related to landform development. Three lecture hours and one laboratory period of two hours a week.

ES 365. PHYSICAL AND GEOLOGICAL OCEANOGRAPHY. (3) A study of the ocean environment emphasizing the ocean's place in planet Earth's energy exchange systems. Emphasis also on the ocean as a complex solution, topography of the ocean floor, sedimentation and coastline morphology.

ES 370. INTRODUCTION TO ENVIRONMENTAL PROBLEMS. (3) Prerequisite: consent of the instructor. The study of major problems in the human environment.

ES 380. ENVIRONMENTAL GEOLOGY. (3) Prerequisite: ES 102 or permission of the department. The study of earth processes and rock properties which have direct implications for human activities.

ES 404. CONCEPT DEVELOPMENT IN EARTH SCIENCE. (3) Prerequisite: consent of the instructor. Examination of major concepts in earth science with emphasis on implementing their instruction at the primary and secondary school levels. One lecture hour and two laboratory periods of two hours each a week.

ES 405. SELECTED TOPICS IN EARTH SCIENCES. (3) Prerequisite: consent of instructor. An in-depth treatment of specific topics

selected from one of the fields of the earth sciences. To provide increased specialization in various fields beyond the 300-level course. Topics will vary from semester to semester. May be repeated for credit.

ES 460. INDIVIDUAL STUDY IN EARTH SCIENCES (1-4) Permission of the department must be obtained and credit hours established in advance. Tutorial study or special research problems. May be repeated for credit.

DEPARTMENT OF POLITICAL SCIENCE

Chairman: Professor Lyons
Associate Professors: Cox, Fleitas, Jamgotch, McCoy
Assistant Professors: Arrington, Backman, Brenner, Bryant, Dorin, Kyle, Mundt, Stowe
Instructor: Lewis

A major in Political Science for the B.A. degree requires: (1) 30 semester hours of political science to include PSC 490 (Scope of Political Science) and one of the following three courses: PSC 390 (Political Measurement), PSC 391 (Research Methods) and/or PSC 392 (Survey Research); and (2) 18 semester hours of course work in no more than two of the following disciplines: anthropology, black studies, computer science, economics, geography, history, mathematics, philosophy, psychology and sociology. All 18 hours may be taken in a single discipline—for example, sociology or history; or, any other combination may be used, such as 12 hours in sociology and six hours in psychology. With an adviser's approval, a student may elect to do 18 hours of related work on an interdisciplinary topic.

The offerings including introductory courses are divided into six major areas as follows:

1. American Politics: Political Science 110, 301, 303, 305, 307, 309, 311, 312, 313, 314, 315, 316, 318, 319, 321, 322.

2. Comparative Politics: Political Science 130, 331, 332, 335, 336, 341, 343, 345, 346, 347, 348, 349.

3. International Relations: Political Science 150, 353, 357, 359, 360, 361, 365, 469.

4. Political Theory: Political Science 371, 373, 374, 375.

5. Public Administration: Political Science 383, 384, 387.

6. Scope and Methods of Political Science: Political Science 390, 391, 392, 490.

POLITICAL SCIENCE

PSC 110. INTRODUCTION TO AMERICAN POLITICS. (3) Role of the President, Congress, Supreme Court and national administrative agencies in the American political system. Relationship between the American people and their political institutions with emphasis upon political culture, the electoral process, interest groups, political communication and the international commitments of the United States.

PSC 130. INTRODUCTION TO COMPARATIVE POLITICS. (3) Political comparisons among nations. Diverse geographical emphases, including some of the following: Latin America, the Atlantic communities of the West, Central and Eastern Europe, the Middle East, Africa, Central Asia, East Asia and Southeast Asia.

PSC 150. INTRODUCTION TO INTERNATIONAL POLITICS. (3) Analysis of politics among nations: material and psychological sources of national power, the role of law, force, and diplomacy in world politics, problems of peace and disarmament, and international organization.

PSC 150L. INTRODUCTION TO INTERNATIONAL POLITICS LABORATORY. (1) (Simulation Section). The laboratory experience will address itself to the simulation of a complex phenomenon known as "international behavior." One laboratory period of two hours per week.

PSC 300. SELECTED TOPICS IN POLITICAL SCIENCE (1-4) An intensive study of a political topic. The particular topic investigated may vary from semester to semester, and a student may take more than one course under this number.

AMERICAN POLITICS

PSC 301. POLITICAL SOCIALIZATION. (3) The study of the processes by which the political culture of the society is transmitted, formally and informally, to individual members. The course examines the learning process, the agents of socialization, the content of the learning and the consequences of political socialization for the functioning of the political system.

PSC 303. PUBLIC OPINION AND THE MASS MEDIA. (3) The nature and influence of public opinion and the effects of the news media on public opinion and political behavior. The course emphasizes research on the development and content of public opinion and social psychological studies on the process of opinion change.

PSC 305. ELECTORAL BEHAVIOR. (3) An examination of the psychological, sociological, and political variables that influence voting behavior and that affect electoral stability and change. The course emphasizes studies derived from survey research.

PSC 307. ETHNIC POLITICS. (3) The role of racial, religious and nationality groups in American politics.

PSC 309. POLITICAL PARTIES AND INTEREST GROUPS. (3) Analysis of the role played by political parties and interest groups in the American political system.

PSC 311. THE CONGRESS. (3) Analysis of the role of the Congress in the American political system and its relationships with the other branches of government. The course includes study of the recruitment and socialization of congressmen, the committee system and roll call analysis.

PSC 312. THE PRESIDENCY. (3) Analysis of the role of the Presidency in the American political system and its relationships with the other branches of government. The course includes study of the strategies of presidential nomination and election, the sources and indicators of presidential power, how those who have held the office have shaped it and been shaped by it.

PSC 313. JUDICIAL BEHAVIOR. (3) Recommended prerequisites: PSC 390 or 391 or equivalent. Survey of the empirical studies concerning the determinants of the behavior of judges.

PSC 314. AMERICAN CONSTITUTIONAL LAW. (3) Examines the development of American constitutionalism, with a major emphasis on the roles played by the Supreme Court in the emergence of the American political system. Studies the justices as intellectual personalities engaged in the formulation of national policies. Utilizes Supreme Court decisions and opinions, histories, biographies and political science analyses to study the evolution of governmental powers and individual rights from colonial America through the end of the Roosevelt Court or Stone Court in 1946.

PSC 315. CIVIL RIGHTS AND LIBERTIES. (3) An analysis of Supreme Court decisions relating to civil rights and liberties.

PSC 316. JUDICIAL PROCESS. (3) Analysis of the structure and functions of federal and state courts in the context of the American political system. Emphasis upon the roles of judges, juries, counsel, litigants, police, interest groups and other actors in the adjudication processes.

PSC 318. LAW AND SOCIAL CHANGE. (3) Examines the formulation of desegregation and poverty policies at the national, state and local levels. It studies the interaction of law and social change in these areas of public policy with an emphasis upon the political processes of courts and other legal subsystems.

PSC 319. STATE POLITICS. (3) Comparative analysis of the fifty states utilizing socioeconomic characteristics, structural traits and policy outputs as the primary variables of interest.

PSC 321. URBAN POLITICS. (3) Analysis of the political process in the nation's metropolitan areas and the adjustments and responses of the U.S. governmental system in attempting to cope with the urban crisis.

PSC 322. CONTEMPORARY URBAN PROBLEMS. (3) A study of selected urban problems, including an analysis of the causes and consequences of governmental policies designed to cope with these problems. Topics of interest would include: crime and law enforcement, poverty and welfare, urban transportation, education, pollution, housing and redevelopment, and urban revenue and expenditure patterns.

COMPARATIVE POLITICS AND AREA STUDIES

PSC 331. THE NATURE OF POLITICAL CHANGE. (3) Comparative study of political change with reference to problems of reform, revolution and nation-building.

PSC 332. THE POLITICS OF MODERNIZATION IN WESTERN SOCIETIES. (3) An examination of cultural crises, the emergence of a counter-culture and the development of new forms of political opposition within western industrial societies. Exploration of possible societal form of the future, including the post-welfare state and the western technocracy.

PSC 335. POLITICAL VIOLENCE. (3) This course is designed to address four questions: (1) What is political violence? (2) Why does it occur? (3) What is its relationship to other political processes? (4) What is its impact on society? The emphasis of this course, while drawing on examples from contemporary American and foreign scenes, is on examining manifestations of violent political behavior such as pathological violence, conspiratorial violence, collective violence and governmental violence.

PSC 336. COMPARATIVE URBAN POLITICS. (3) Urban growth, urban problems, and political response in cross-national perspective. Focus on the urban policy process including political explanations for variations in national urban growth and urban structure. Attention to selected case and comparative studies on the U.S., Europe, Latin America, Africa and Asia.

PSC 341. GOVERNMENT AND POLITICS OF WESTERN EUROPE. (3) Comparative analysis of selected West European governments including Great Britain, France, Germany and Italy.

PSC 343. AFRICAN POLITICS. (3) A comparative perspective on the politics of independence in sub-Saharan Africa and on the performance of the new political systems there in terms of national and international integration and the modernization of traditional societies and economies.

PSC 345. GOVERNMENT AND POLITICS OF THE SOVIET UNION. (3) The origins of Bolshevism and the substance and role of Marxist-Leninist ideology. The structure and functions of the Communist Party of the Soviet Union (CPSU). The principles of Soviet politics and the instruments of rule. The Soviet political system in transition and its relationship to world communism.

PSC 346. COMMUNIST POLITICS IN COMPARISON. (3) Studies the most dynamic features of communist public order systems including the Soviet Union, Poland, Czechoslovakia, Hungary, Yugoslavia, Cuba and the People's Republic of China. Compares ideologies, party leaderships, youth movements, interest groups, political dissent and the politics of human mobilization and national development.

PSC 347. GOVERNMENT AND POLITICS OF LATIN AMERICA. (3) Comparative study of the political development of Latin American political systems with reference to selected aspects and problems of contemporary politics in the region.

PSC 348. POLITICS IN THE PEOPLE'S REPUBLIC OF CHINA. (3) Revolution, ideology and organization in communist China. The origins, development and maintenance of the Chinese political system. Cross-national comparison with other communist and mobilization systems.

PSC 349. GOVERNMENT AND POLITICS OF ASIA—DEMOCRATIC SYSTEMS. (3) Political behavior and the growth of democratic political institutions in selected Asian states, particularly Japan. Emphasis on the nature of political change and political process—political participation and recruitment, political socialization, party systems and voting behavior, policy formation. Cross-national comparison with non-Asian democratic systems.

INTERNATIONAL RELATIONS

PSC 353. POLITICAL FOUNDATIONS OF INTERNATIONAL ORDER. (3) The structure, processes and problems of general and regional international organizations, and the origins and contemporary role of international law.

PSC 357. AMERICAN FOREIGN POLICY. (3) Systematic study of contemporary American foreign policy-making.

PSC 357L. AMERICAN FOREIGN POLICY LABORATORY. (1) The laboratory experience will allow students to simulate the decision-making process of the United States government in the solution of key foreign policy issues. One laboratory period of two hours per week.

PSC 359. SOVIET FOREIGN POLICY. (3) The concepts, content and evolution of Soviet foreign relations, with emphasis upon change

and continuity in Russian and Soviet policies. Contemporary problems of Soviet diplomacy with other world powers and with the Marxist-Leninist nations of the Communist international system.

PSC 360. COMPARATIVE FOREIGN POLICIES. (3) Comparative analysis of the foreign policies of both large and small nation-states. This course, with the use of comparative approaches, focuses on the major variables within and outside contemporary states that influence the nature of their foreign policies. Of particular importance will be the examination of both variables on foreign policy under specifiable conditions and the policy-making apparatus of each state.

PSC 361. PROBLEMS OF DEFENSE AND NATIONAL SECURITY POLICY. (3) Investigates major concepts of war and the problems of arms control, escalation and the proliferation of nuclear weapons. Examines trends and conditions of international conflict, technological change and domestic political environments as they relate to defense and national security.

PSC 365. EAST ASIA IN WORLD AFFAIRS. (3) An examination of the basic factors governing East Asia's role in world affairs, both traditionally and in the present day.

PSC 469. SCOPE AND THEORY IN INTERNATIONAL POLITICS. (3) Prerequisites: PSC 130 or 150. Survey of major theories in the field, with emphasis on contemporary, empirically based approaches to theory building.

POLITICAL THEORY

PSC 371. HISTORY OF CLASSICAL POLITICAL THOUGHT. (3) Major concepts and systems of political thought from Plato to the seventeenth century.

PSC 373. HISTORY OF MODERN POLITICAL THOUGHT. (3) Major concepts and systems of political thought from the seventeenth century to the present.

PSC 374. CONTEMPORARY SYSTEMATIC POLITICAL THEORY. (3) A review of the major contemporary theorists who present a comprehensive and systematic analysis, evaluation or prescription of politics. Both normative and empirical approaches will be used in studying twentieth century democratic theory, systems analysis, group theory power concepts and neo-Marxian and conservative ideologies.

PSC 375. LEGAL THOUGHT. (3) A study of the contributions of natural law, legal positivism and legal realism to an understanding of what is the nature of law.

PUBLIC ADMINISTRATION

PSC 383. ADMINISTRATIVE BEHAVIOR. (3) The role of the administrator and public bureaucracy in modern democratic society.

Particular attention will be given to the interplay of forces created by executives, legislators, political parties and interest groups.

PSC 384. DECISION MAKING IN PUBLIC ADMINISTRATION. (3) An examination of the major schools of decision making theory: rationalism, incrementalism and mixed-scanning. The use of these approaches in public administration in areas of budgeting, organization and program design, and personnel will be studied, using problem sets and simulation techniques.

PSC 387. URBAN ADMINISTRATION. (3) A study of administration in the context of the urban setting. Attention will be given to urban governmental bureaucracies, their response to and interaction with their environments, and their roles in developing urban policy.

SCOPE AND METHODS OF POLITICAL SCIENCE

PSC 390. POLITICAL MEASUREMENT. (3) An introduction to the use of quantitative techniques in the analysis of political data. The course emphasizes the understanding of measurement concepts and introduces the student to practical applications in working with quantitative data.

PSC 390L. POLITICAL MEASUREMENT LABORATORY (1) One two-hour laboratory period per week. The laboratory is required for successful completion of PSC 390 and is to be taken concurrently with PSC 390. The laboratory is open only to students who are enrolled in PSC 390.

PSC 391. RESEARCH METHODS IN POLITICAL SCIENCE. (3) An introduction to research methods in political science to include a brief consideration of the following topics: philosophy of science literature; the place of research methods in the discipline of political sciences; research design; research strategies and techniques; data interpretation.

PSC 391L. RESEARCH METHODS LABORATORY. (1) One two-hour laboratory period per week. The laboratory is required for successful completion of PSC 391 and is to be taken concurrently with PSC 391. The laboratory is open only to students who are enrolled in PSC 391.

PSC 392. INTRODUCTION TO SURVEY RESEARCH. (3) An examination of the purposes, logic and procedures of survey research in the study of political attitudes and behavior. The major steps in survey research—planning, sampling, questionnaire design, data collection, processing data and analysis—will be reviewed. The student will have an opportunity to apply newly acquired skills in a field situation.

PSC 400. INDEPENDENT STUDY. (1-3) Prerequisite: consent of the instructor. Supervised investigation of a political problem that is (1) of special interest to the student; (2) within the area of the instructor's special competence; and (3) normally an extension of previous course

work with the instructor. A student may take more than one course under this number.

PSC 490. THE SCOPE OF POLITICAL SCIENCE. (3) Prerequisites: senior standing and 12 hours of political science. An inquiry into the impact of behavioralism on the theories and research of political science. Each student will prepare an individual research project.

DEPARTMENT OF PSYCHOLOGY

Chairman: Professor Greenspoon
Professors: Diamant, Grimsley
Associate Professors: Simono, Sohn
Assistant Professors: Calhoun, Fernald, Goolkasian, Haskett, Lamal, Long, Maitland, Selby, Toner, Wachowiak, Windholz
Instructors: Ford, Osborne, Wroten
Lecturer: Puttick
Lecturers: (part-time) Fernald, O'Connor, Starnes

A major in psychology leading to the B.A. degree consists of 29 semester hours of psychology including General Psychology (101 and 101L), Research Methodology (241), History and Systems of Psychology (461) and a senior seminar (491, 492, 493, 494, or 495).

Other course requirements for majors are MAT 122 (Elements of Statistics), two courses from the subject area of biology, chemistry and physics and six hours of social science exclusive of psychology.

The additional courses necessary to fulfill the 29 hour requirement of the major should be selected to aid the student in the attainment of higher goals. Students considering graduate school are strongly urged to take courses in basic psychological processes, eg., learning, sensation and perception, physiological psychology.

Related work consists of 18 semester hours which are to be arranged by the student and his adviser. Related work should be considered in terms of the fulfillment of the individual's vocational and educational goals. Students in the elementary education program may use the education sequence as related work.

RECOMMENDED CURRICULUM FOR THE B.A. DEGREE IN PSYCHOLOGY

FRESHMAN YEAR

Psychology 101 3	Psychology (202, 203
Psychology 101L 1	210, 220 or 230) 3
Math 101 or 103* 3	Humanities 3
Natural Science	Math 122 for SBS 3
(with lab; either	Natural Science
biology, chemistry	(either biology, chemistry

*Students who seek certification in early childhood and elementary education should take Math 130 and 131 instead of 101. They will then take Math 122, and PSY 240 will be taken one semester later.

or physics) 4	or physics) 3-4
English 3	English 3
—	—
14	15-16

SOPHOMORE YEAR

Psychology 241 4	Psychology (200 or 300 level) 6
Social Science 3	Related Work 3
Related Work 3	Social Science 3
Elective 3	Elective 3
Humanities 3	—
—	15
16	

JUNIOR YEAR

Psychology (300 level and above) 3-6	Psychology (300 level and above) 3-6
Related Work 6	Related Work 6
Electives 3-6	Electives 3-6
—	—
15	15

SENIOR YEAR

Seminar in Psychology 3	Seminar in Psychology 3
or	or
Psychology 461 3	Psychology 461 3
Electives 12	Electives 11
—	—
15	14

COURSE DESCRIPTIONS

PSYCHOLOGY

PSY 101. GENERAL PSYCHOLOGY. (3) A survey of the field including such topics as learning, emotions, motivation, personality, psychological testing and abnormal behavior. Emphasis on psychology as a behavioral science. May be taken with or without the lab. All psychology majors and those who wish to apply this course as partial fulfillment of the University science requirement must take PSY 101L during the same semester in which they take PSY 101.

PSY 101L. GENERAL PSYCHOLOGY LABORATORY. (1) Two one-hour laboratory periods per week. An introduction to laboratory equipment and procedures. (May not be taken apart from the lecture portion of PSY 101 except by psychology majors who have permission of the department.)

PSY 202. EDUCATIONAL PSYCHOLOGY. (3) Prerequisite: PSY 101. The psychology of learning; problems related to concept formation and application of behavior modification techniques to the classroom.

PSY 203. PSYCHOLOGY OF ADJUSTMENT. (3) Prerequisite: PSY 101. The study of the process of adjustment. Primary consideration given to motivation, frustration and conflict, adjustment mechanisms and psychotherapy.

PSY 210. DEVELOPMENTAL PSYCHOLOGY. (3) Prerequisite: PSY 101. A detailed discussion of the principles of psychological change from infancy to old age, with a consideration of genetic, physiological and environmental determinants.

PSY 220. CHILD PSYCHOLOGY. (3) Prerequisite: PSY 101. Psychological development in infancy and childhood, including the development of learning, thought, language, social relations, intelligence and morality. Remedial measures suggested in dealing with early child tendencies which might otherwise lead to severe academic and social difficulties.

PSY 230. ADOLESCENT PSYCHOLOGY. (3) Prerequisite: PSY 101. Developmental and psychological characteristics of adolescence. Research methods and familiarity in case study emphasized. School and personality problems studied.

PSY 241. RESEARCH METHODOLOGY. (4) Prerequisites: PSY 101, PSY 101L and MAT 122. An introduction to methods of psychological research including experimental, observational and correlational. Basic concepts of philosophy of science will also be discussed. Emphasis on methodology rather than content but the applicability of methods to current topics in psychology is covered. Three lecture hours and one two-hour laboratory period a week.

PSY 303. SOCIAL PSYCHOLOGY. (3) Prerequisite: PSY 101. The social behavior of man. Man's behavior in relation to other individuals, groups and products of culture, both material and nonmaterial. Group dynamics, leadership, the nature of prejudice, the effects of mass communication, public opinion are some of the topics treated.

PSY 305. PSYCHOLOGY OF PERSONALITY. (3) Prerequisite: PSY 101. Current personality theories. Consideration given to psychoanalytic, physiological, trait and factor, the perceptual viewpoints in the light of contemporary research.

PSY 307. ABNORMAL PSYCHOLOGY. (3) Prerequisite: PSY 101. A history of psychopathology. Case studies, differential diagnosis, psychological dynamics of abnormal behavior, including theoretical, clinical and experimental contributions in the field.

PSY 310. COMPARATIVE PSYCHOLOGY. (3) Prerequisite: PSY 101. An introduction to the study of animal and human behavior from a comparative point of view. Emphasis on the classification of behavior patterns as well as the origin and development of these patterns.

PSY 311. PSYCHOLOGY OF LEARNING. (3) Prerequisite: PSY 101. (Completion of PSY 241 is strongly recommended.) A survey of the major theories and empirical findings in the area of learning.

PSY 312. MOTIVATION. (3) Prerequisite: PSY 101. (Completion of PSY 241 is strongly recommended.) A study of the current theories and research in the area of human and animal motivation.

PSY 313. SENSATION AND PERCEPTION. (3) Prerequisite: PSY 101. (Completion of PSY 241 is strongly recommended). A survey of sensory and perceptual processes, including such topics as psychophysics, information processing and color perception.

PSY 371. INDUSTRIAL PSYCHOLOGY. (3) Prerequisite: PSY 101. Psychological theories as applied to industry and business. Studies in human engineering and personnel problems.

PSY 401. TOPICS IN PSYCHOLOGY. (3) Prerequisite: consent of the instructor. Examination of special psychological topics. May be repeated for credit.

PSY 420. BEHAVIOR MODIFICATION. (3) Prerequisite: consent of the instructor. Preference is given to junior and senior psychology majors. A consideration of the application of behavioral principles to human behavior. Topics considered include positive control, aversive control, modeling and vicarious processes, desensitization and aversive counterconditioning. Three hours involvement per week in an off-campus facility is required. A paper dealing with a topic selected by the student is required.

PSY 430. HUMAN COGNITIVE PROCESSES. (3) Prerequisite: PSY 101. (Completion of PSY 241 is strongly recommended.) A study of the processes involved in such complex human behaviors as language (acquisition and usage), memory and problem solving. Emphasis will be upon experimental findings and current theories.

PSY 451. PHYSIOLOGICAL PSYCHOLOGY. (3) Prerequisite: PSY 101. The relationship of physiological systems to integrated behavior. Emphasis on neural aspects of behavior and current studies in reaction to drug and other stimuli.

PSY 461. HISTORY AND SYSTEMS OF PSYCHOLOGY. (3) Prerequisite: PSY 101. Influential psychological systems and their historical antecedents. Emphasis on Gestalt, Psychoanalytic and behavior theory. Evaluation of current existential influence.

PSY 480. RESEARCH METHODS IN PHYSIOLOGICAL PSYCHOLOGY. (4) Prerequisites: PSY 101 and permission of the instructor. An introduction to current laboratory techniques in physiological psychology, including basic surgeries, lesioning, stimulation and histology. Three lecture hours and one two-hour laboratory period a week.

PSY 481. PSYCHOLOGICAL COUNSELING AND PHYCHOTHERAPY. (3) Prerequisite: PSY 101 and PSY 307. An introduction to the major theories of psychological counseling and psychotherapy with special emphasis on individual techniques including diagnosis.

PSY 489. PRACTICUM IN APPLIED PSYCHOLOGY. (1-4) Prerequisite: permission of the instructor. A course allowing junior and senior students the opportunity to work in practical settings related to psychology under the supervision of a faculty member. (May be repeated for credit with departmental permission).

PSY 490. INDIVIDUAL RESEARCH. (1-4) Prerequisite: permission of the instructor. A course allowing the senior psychology major an opportunity to initiate, design and conduct an original research problem in his area of interest. May be repeated for credit.

PSY 491. SEMINAR IN HUMAN ADAPTATION AND BEHAVIOR. (3) Prerequisite: senior standing and permission of the instructor. Intensive reading and discussion in selected areas of psychology, such as stress, personality, emotions and psychopathology.

PSY 492. SEMINAR IN SOCIAL PSYCHOLOGY. (3) Prerequisite: permission of the instructor. An intensive study at the advanced level of topics of current research and theoretical interest in social psychology.

PSY 493. SEMINAR IN PHYSIOLOGICAL PSYCHOLOGY. (3) Prerequisite: PSY 101 and permission of the instructor. An intensive study of selected topics in physiological psychology, such as psychopharmocology and neuro-physiological basis of learning and memory.

PSY 494. SEMINAR IN EXPERIMENTAL PSYCHOLOGY. (3) Admission by consent of the instructor. An in-depth examination of an area of current concern in psychological laboratory. Each semester will have a different focus, and such topics as discrimination learning, memory, experimental analysis of behavior, and attention will alternate.

PSY 495. SEMINAR IN DEVELOPMENTAL PSYCHOLOGY. (3) Prerequisite: PSY 101 and permission of the instructor. This seminar will be a concentrated examination of current issues and research in a field of developmental psychology. Such topics as the concept of development in historical and current usage, learning (especially in human infants), development of social relations, intelligence, cognitive abilities and the acquisition of language will be treated in detail.

PSY 501. PSYCHOLOGY OF EXCEPTIONAL CHILDREN. (3) Assesing the exceptional child. Emphasis on current research in several diagnostic categories.

PSY 502. ADJUSTMENT PROBLEMS OF THE DISADVANTAGED. (3) A seminar concerned with such issues as racial attitudes, prejudice, and poverty. Assigned reading and discussion deal with the application of psychological principles to these problems. Contributing lecturers with professional experience with problems of the disadvantaged will participate.

PSY 503. PSYCHOLOGY OF MENTAL RETARDATION. (3) An intensive study of the psychological and sociological aspects of mental retardation in relation to adjustment and educational development. Emphasis on current research and diagnostic categories.

PSY 504. TESTS AND MEASUREMENTS. (3) Prerequisite: PSY 101. A survey of psychological and educational measurements in current use. Emphasis will be placed on structure, administration and application of group tests. Individual tests such as Stanford-Binet, WISC and WAIS will be reviewed.

PSY 505. ADVANCED PERSONALITY THEORY. (3) A critical evaluation of the major personality theories including an extensive survey of current research.

PSY 514. METHODS OF STUDENT EVALUATION. (3) Prerequisite: permission of the instructor. A practical course of construction of teacher-made evaluation procedures. Special emphasis will be placed on writing and item analysis of essay and restricted-response achievement tests.

PSY 520. PSYCHOLOGY OF THINKING. (3) The study of theories of learning, thinking, and cognition, especially as they apply to the educational process.

DEPARTMENT OF SOCIOLOGY AND ANTHROPOLOGY

Chairman: Associate Professor Goodnight
Associate Professor: Heitman
Assistant Professors: Adams, Bertoli, Cook, Dubisch, Ferraro, Fischer, Forrest, Lance, Michalowski, Rent, Wilson
Instructors: Bonney, Hayes, Roberts, Scout
Lecturer: Wolf
Part-time Lecturer: Frye

The Department of Sociology and Anthropology includes the disciplines of sociology and anthropology and the field of social work. Although an academic major presently is available only in sociology, a variety of anthropology and social work courses is offered and plans are under way to expand offerings and develop programs in each of these areas.

THE DISCIPLINES

Sociology

Sociology is the scientific study of man's social life. It focuses upon the forces which organize and structure societies and smaller groups as well as the forces which disorganize and threaten to dissolve them. As a science, sociology applies an objective and systematic method of

investigation to identify the patterns and forms of social life and to understand the processes by which they are established and changed.

The study of sociology is particularly attractive to persons preparing for further study and professional careers as well as persons who are seeking a liberal education and immediate employment. As a liberal arts program, it enables the student to understand the social context in which he finds himself and the social forces which shape his personality, his actions and his interactions with others. As a pre-professional program it provides a good background for persons entering social work, law, teaching, the ministry, journalism, planning, public relations and personnel services. It also provides analytical skills related to market research and program evaluation in human services, sales, management and other business activities.

Anthropology

Anthropology is the study of man and his culture and is organized into four sub-fields: cultural anthropology, archeology, physical anthropology and linguistics. It focuses upon his cultural heritage and history and upon the biological aspects of man which relate to his cultural development. It emphasizes the comparative study of man and the cross-cultural analysis of his institutionalized responses to fundamental human needs.

The study of anthropology is relevant for persons whose occupations and endeavors require an understanding of a variety of cultures. It is particularly useful for teachers of students from diverse cultural backgrounds, social workers and persons seeking careers in journalism and comunications as well as persons who plan to work in or with foreign countries. It provides competencies needed for employment in such organizations as museums, highway departments (as archeologists), police departments (as physical anthropologists), the park service and the Bureau of Indian Affairs.

Social Work

Social work includes the study and enhancement of human social functioning. It focuses upon the prevention, treatment and control of problems in the social life of individuals, groups and communities. It blends knowledge from the social and behavioral sciences with social work theory and skills in the professional application of the helping relationship.

The study of social work prepares persons for further study and careers in social welfare, including direct social service, family counseling and crisis intervention. It provides an excellent background for careers involving the planning, administration, and evaluation of social services. It also provides knowledge and skills utilized by vocational rehabilitation counselors, probation and parole officers, medical and psychiatric social workers and other members of community and industrial social service organizations.

Sociology Major

A major in sociology leading to the B.A. degree consists of (1) a minimum of 29 semester hours of sociology beyond the 100-level including the core curriculum of SOC 151, 253, 254, 354, 355 and 456; and (2) a minimum of 18 semester hours of related work.

The sociology curriculum is designed to familiarize the student with the questions sociologists ask about social reality, the conceptual and methodological tools they utilize to gain answers to these questions and the resultant body of knowledge. It is relatively structured in terms of the number of courses the student is required to take, but it is highly flexible in terms of the freedom to focus upon and become involved in inquiry pertaining to sociological problems of the student's own choosing within each of these courses. Students should consult with the Department of Sociology and Anthropology about internship opportunities in sociology.

Related work is arranged by the student in consultation with an adviser and may consist of a concentration of courses: (1) within a single discipline; (2) selected from two complementary disciplines; or (3) focused upon a specific topic. Students in the teacher certification program may use the courses in the professional education sequence as their related work.

Concentration in Anthropology

Students interested in a concentration in anthropology may select a program of courses in consultation with an anthropology faculty member to satisfy their related work requirement. They should consult with the Department of Sociology and Anthropology concerning internships and field schools in anthropology and archeology.

Concentration in Social Work

Students interested in preparing for careers in social work may designate "social work" as the topic around which they will build a related work program. It is recommended that such a program consist of social work courses and relevant courses from the various social and behavioral science. Students should consult with the Department of Sociology and Anthropology concerning internship or field placement opportunities in social work.

COURSE DESCRIPTIONS

ANTHROPOLOGY

ANT 101. GENERAL ANTHROPOLOGY. (3) A general introduction to the four subfields of anthropology, covering such topics as man's biological and cultural evolution; the structure and functions of various institutions in primitive, peasant and modern complex societies;

language and culture; and methods of cultural analysis and theories of culture. Prerequisite for all upper level courses in anthropology.

ANT 210. TOPICS IN ETHNOGRAPHY. (3) Prerequisite: General Anthropology. Examination of ethnographic regions of the world selected for study by students and faculty members. May be repeated for credit as the topics vary.

SOCIAL WORK

SOC 380. FIELD OF SOCIAL WORK. (3) Prerequisite: consent of the instructor. Description and analysis of the historical development and philosophy of social work and the operation of many specialized social services in contemporary society. (Does not satisfy the general degree requirements for social science.)

SOC 481. METHODS OF SOCIAL WORK. (3) Prerequisite: SOC 380. Introduction to theories and principles of methods used in working with individuals, groups and communities in correctional, medical, psychiatric and other settings utilizing recent literature and case materials. (Does not satisfy the general degree requirements for social science.)

SOCIOLOGY

SOC 151. INTRODUCTION TO SOCIOLOGY. (3) Introduction to sociology as a discipline, the sociological perspective and the process of sociological inquiry emphasizing fundamental concepts, principles and procedures.

SOC 232. SOCIOLOGY OF THE FAMILY. (3) Prerequisite: SOC 151. Description and analysis of the family as a social institution with special reference to historical and cross-cultural perspectives and the impact of social change on the family and its interrelations with other institutions.

SOC 253. EVOLUTION OF SOCIOLOGICAL INQUIRY. (3) Prerequisite: SOC 151 or the equivalent. Examination of the origins and evolution of fundamental sociological concepts, theories and research procedures and their contributions to sociological inquiry.

SOC 254. QUANTITATIVE SOCIOLOGICAL ANALYSIS (4). Prerequisite: SOC 253 or consent of the instructor. Examination of concepts and procedures pertaining to sociological inquiry with emphasis on data processing, measurement theory and quantitative models of social analysis. Three hours of lecture-discussion and two hours of laboratory each week.

SOC 271. SOCIAL PROBLEMS. (3) Prerequisite: SOC 151. Analysis of contemporary social problems and their consequences for mankind, with special emphasis upon the problems of American society.

SOC 310. AMERICAN MINORITY GROUPS. (3) Prerequisite: SOC 151. Analysis of the relations between dominant and minority groups in American society with special emphasis on the establishment, maintenance, and decline of dominance involving racial, ethnic and religious minorities.

SOC 321. HUMAN ECOLOGY. (3) Prerequisite: SOC 151. Examination of the patterns and principles of societal adjustments to the physical environment, the distribution of communities and institutions and the dynamics of ecological change.

SOC 322. POPULATION ANALYSIS. (3) Prerequisite: SOC 151. Analysis of patterns of human behavior and ideologies which influence the number, distribution and composition of population and the effect of population characteristics and changes upon society.

SOC 324. SOCIOLOGY OF THE COMMUNITY. (3) Prerequisite: SOC 151. Analysis of the concept of community, methods for delineating and describing the dimensions of community and examination of planned and unplanned community change.

SOC 325. URBAN SOCIOLOGY. (3) Prerequisite: SOC 151. Examination of the origin and development of cities, the ecological and social structure of city and region, the nature and functioning of urban institutions and the process of urban decay and renewal.

SOC 343. SOCIAL MOVEMENTS. (3) Prerequisite: SOC 151. Analysis of collective behavior with emphasis on the ideology, development and organization of movements seeking or resisting change in the social order.

SOC 354. SOCIOLOGICAL INQUIRY: THEORIES AND THEIR CONSTRUCTION. (3) Prerequisite: SOC 254 or consent of the instructor. Systematic analysis of competing and complementary theories in contemporary sociology and the acquisition and application of the basic skills of theory construction.

SOC 355. SOCIOLOGICAL INQUIRY: METHODS OF VERIFICATION. (4) Prerequisite: SOC 354. Examination and application of research principles and techniques for the verification of sociological propositions, including the formulation of the problem, the design of the research, and the collection, analysis and interpretation of the data. Three hours of lecture-discussion and a laboratory period of two hours each week.

SOC 361. SOCIALIZATION AND SOCIETY. (3) Prerequisite: SOC 151. Analysis of the process of socialization and social interaction and the sociocultural dimension of personality.

SOC 362. SOCIAL CONTROL. (3) Prerequisite: SOC 151. Analysis of the relation of social norms to conforming and deviant behavior with special attention to public opinion, propaganda and other techniques of social control.

SOC 372. SOCIOLOGY OF DEVIANT BEHAVIOR. (3) Prerequisite: SOC 151. Examination of the forms, causes, consequences and control of deviant behavior.

SOC 373. JUVENILE DELIQUENCY. (3) Prerequisite: SOC 151. Analysis of juvenile crime in relation to family, peer group, community and industrial structures with special attention to theories of delinquency and agencies of delinquency control and treatment.

SOC 411. SOCIAL STRATIFICATION: POWER, PRIVILEGES, AND PRESTIGE. (3) Prerequisite: introductory sociology and consent of the instructor. Cross-cultural and comparative analysis of the distributive system of societies focusing upon the explanation of inequality among societies and the variations in power, privilege and prestige.

SOC 413. SOCIOLOGY OF WORK, OCCUPATIONS AND PROFESSIONS. (3) Prerequisite: introductory sociology and consent of the instructor. Analysis of occupational and professional socialization and roles; career patterns and professional ideologies; and occupational structure and change.

SOC 415. SOCIOLOGY OF COMPLEX ORGANIZATION. (3) Prerequisite: introductory sociology and consent of the instructor. Analysis of the structure and dynamics of complex organizations with special attention to rationalization through bureaucracy and the mechanisms of change.

SOC 432. SEMINAR IN CONTEMPORARY AMERICAN FAMILY SYSTEMS. (3) Prerequisites: introductory sociology and consent of instructor. Analysis of the development of modern American family systems, their relationship to American society and their contributions to personality development with special emphasis on conceptual frameworks for family analysis.

SOC 456. SEMINAR IN ADVANCED SOCIOLOGICAL INQUIRY. (3) Prerequisite: SOC 355. Synthesis and utilization of basic sociological principles and techniques in supervised independent theorization and verification, including the presentation of projects to seminar members and departmental faculty for evaluation and criticism.

SOC 473. CRIMINOLOGY. (3) Prerequisite: introductory sociology and consent of instructor. Analysis of sociological and psychological research pertaining to crime and crime statistics including historical and contemporary theories of criminal behavior and modern trends in criminal law and corrections.

SOC 485. APPLIED SOCIOLOGY. (3) Prerequisite: SOC 355 or consent of the instructor. Exploration of the role of sociologists in law and law enforcement, medicine, social work and social welfare, management, the military establishment, community development, foreign policy, the development of developing countries, urban poverty

and planning, and the educational system. Emphasis on the adaptation of sociological research methods and theory to temporal and other limitations imposed by the special characteristics of applied research.

SOC 490. TOPICS IN SOCIOLOGY. (1-3) Prerequisite: consent of the department. Examination of specialized sociological topics selected by students and faculty. May be repeated for credit. (A listing and brief description of specific courses offered each term is available from the departmental office.)

SOC 495. DIRECTED INDIVIDUAL STUDY. (1-4) Prerequisite: consent of the department. Supervised investigation of a sociological problem of special interest to the student. May be repeated for credit.

SOC 557. ADVANCED GENERAL SOCIOLOGY I: SOCIAL STRUCTURE. (3) Prerequisite: consent of the department. Systematic examination of theories and principles of social structure and organization with special emphasis on role and systems analysis and the segmentation and integration of society.

SOC 558. ADVANCED GENERAL SOCIOLOGY II: SOCIOCULTURAL CHANGE. (3) Prerequisite: consent of the department. Systematic examination of the principal theories and principles of sociocultural change with special emphasis on the evolutionary development of societal types, industrialization and urbanization of American society, and transition of developing countries.

BENEFACTIONS

The *American Credit Corporation Professorships in Business Administration* were established by the American Credit Foundation of North Carolina, Inc. The Foundation approved a statement of intent in January, 1967 to contribute $100,000 to be paid over a period of 10 years and to be used for the presentation of a salary supplement or supplements to a distinguished member or members of the faculty of the College of Business Administration, who will be known as *American Credit Corporation Professors of Business Administration.*

The *Robert Lee Bailey Professorship in History* was established in December, 1965 by Mr. and Mrs. Sanford V. Davenport to honor and reward excellence in teaching by a gift in memory of her brother, Lieutenant Robert Lee Bailey of the 10th Armored Division of the U.S. Army, who was killed in Germany on March 22, 1945, near the end of the conflict in Europe. Born on April 21, 1914, in Concord, he attended Davidson College, and before the war was associated with Broyhill Furniture Company.

The *Celanese Professor of Engineering* is a distinguished professorship in the College of Engineering, which has its salary supplemented by part of the income from the rental of a building donated by the Celanese Corporation and valued at more than $1 million.

The *Charles E. Cullen Professorship* was established in 1973 by the Charlotte Sales and Marketing Executives, Inc. to honor the late "Charlie" Cullen of Charlotte. The professorship consists of an endowment in the amount of $100,000 pledged by Charlotte Sales and Marketing Executives, Inc. The income from the endowment is to provide a salary supplement or supplements for a distinguished professor of marketing in the College of Business Administration.

The *Rush S. Dickson Professorships in Finance* were established in memory of the late Rush S. Dickson of Charlotte. The professorships are made possible through the generous gifts and pledges, totaling $100,000 by the Dickson Foundation of Mount Holly and the Rush S. Dickson Family Foundation of Charlotte. Mr. Dickson established both foundations. The net income from the gifts is used for the payment of a salary supplement or supplements to a distinguished member or members of the faculty of the College of Business Administration in the field of finance.

The *Frank Porter Graham Professorship in Black Studies* was established by Miss Alice Lindsay Tate in honor of the former president of the University of North Carolina, United States senator and United Nations mediator. The income from the professorship fund will be used as a salary supplement to a distinguished member or members of the faculty of the University of North Carolina at Charlotte.

The *A. Sue Kerley Professorship in Nursing* was established in 1972 by Miss A. Sue Kerley to provide a salary supplement for a distinguished member of the College of Nursing faculty.

The *Charles H. Stone Fund* was given by Mrs. Stone in memory of her husband, a pioneer in the chemical and dyestuff industry in the South. The grant is dedicated to perpetuating the memory of Mr. Stone and assuring the high quality of chemistry instruction at the University of North Carolina at Charlotte. The net income is used for the payment of a salary supplement to a distinguished member or members of the chemistry faculty, who are designated as "Charles H. Stone Professors of Chemistry." Before World War I, Mr. Stone was employed by a German chemical company, and later he formed his own company in Charlotte and operated it until 1937 when it was purchased by American Cyanamid Company. Mr. Stone remained active with the company until his retirement in 1947. He died October 20, 1963.

NCNB AWARDS

The generosity of the North Carolina National Bank has made possible the NCNB Awards established for the purpose of recognizing and honoring members of the faculty for distinguished service. The NCNB Awards initially are used to reward excellence in teaching by members of the faculty or to honor faculty members for distinguished research and scholarly writing or devoted and sacrificial service to the University and to mankind.

THE FOUNDATION OF THE UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE

The Foundation of the University of North Carolina at Charlotte was founded in 1960 and has had from its inception the goal of undergirding the University and assisting it in the quest for excellence. To accomplish its goals, the Foundation invites private sources to contribute so that needs unmet, or inadequately provided for through state funds, may be met. The Celanese Corporation of America and the Celanese Fibers Company presented a gift in July, 1963, of a manufacturing plant at Burlington, North Carolina, valued at $1,150,000. The income derived from the rental of this plant is used to supplement the salaries of members of the faculty who teach chemistry, engineering, mathematics, physics and related subjects.

Through the 1973-74 academic year, the Directors of the UNCC Foundation have allocated $820,000 to the University for salary supplements, faculty research, scholarships and special projects.

Patrons of Excellence is a program established by the Foundation of the University of North Carolina at Charlotte, with the primary initial objective of supplementing the salaries of distinguished faculty members. Under the program *Patrons* pledge a minimum of $1,000 a year for a period of 10 years or may make a donation of at least $10,000 at one time. *Patrons of Excellence* now number 163. The Foundation continues to seek additional *Patrons*.

UNIVERSITY REGULATIONS

THE EXPECTATION OF THE UNIVERSITY

The University expects from its students a decent respect for other human beings, a regard for the law and a willingness to embrace membership in an academic community.

Some regulations are always necessary in a society of men and women. It is the intent of the University to keep the number of such regulations at a minimum and to depend rather upon the acceptance on the part of each individual of his responsibility as a member of the University.

POLICIES, PROCEDURES, AND DISCIPLINARY ACTIONS IN CASES OF DISRUPTION OF EDUCATIONAL PROCESS

The policies, procedures and disciplinary actions which will be followed in cases of disruption of the educational process are set forth in the following statement:

Section 1. Policies Relating to Disruptive Conduct

The University of North Carolina has long honored the right of free discussion and expression, peaceful picketing and demonstrations, the right to petition and peaceably to assemble. That these rights are a part of the fabric of this institution is not questioned. They must remain secure. It is equally clear, however, that, in a community of learning, willful disruption of the educational process, destruction of property, and interference with the rights of other members of the community cannot be tolerated. Accordingly, it shall be the policy of the University to deal with any such disruption, destruction or interference promptly and effectively, but also fairly and impartially without regard to race, religion, sex or political beliefs.

Section 2. Definition of Disruptive Conduct

(a) Any faculty member (the term "faculty member," wherever used in this statement, shall include regular faculty members, full-time instructors, lecturers and all other persons exempt from the North Carolina State Personnel System [Chapter 126 of the General Statutes as amended] who receive compensation for teaching, or other instructional functions, or research at the University), any graduate student engaged in the instructional program, or any student who, with the intent to obstruct or disrupt any normal operation or function of the University or any of its component institutions, engages, or incites others to engage, in individual or collective conduct which destroys or significantly damages any University property, or which impairs or threatens impairment of the physical well-being of any member of the University community, or which, because of its violent, forceful, threatening or intimidating nature or because it restrains freedom of lawful movement, otherwise prevents any member of the

University community from conducting his normal activities within the University, shall be subject to prompt and appropriate disciplinary action, which may include suspension, expulsion, discharge or dismissal from the University.

The following, while not intended to be exclusive, illustrate the offenses encompassed herein, when done for the purpose of obstructing or disrupting any normal operation or function of the University or any of its component institutions: (1) occupation of any University building or part thereof with intent to deprive others of its normal use; (2) blocking the entrance or exit of any University building or corridor or room therein with intent to deprive others of lawful access to or from, or use of, said building or corridor or room; (3) setting fire to or by any other means destroying or substantially damaging any University building or property, or the property of others on University premises; (4) any possession or display of, or attempt or threat to use, for any unlawful purpose, any weapon, dangerous instrument, explosive, or inflammable material in any University building or on any University campus; (5) prevention of, or attempt to prevent by physical act, the attending, convening, continuation or orderly conduct of any University class or activity or of any lawful meeting or assembly in any University building or on any University campus; and (6) blocking normal pedestrian or vehicular traffic on or into any University campus.

(b) Any person engaged in the instructional program who fails or refuses to carry out validly assigned duties, with the intent to obstruct or disrupt any normal operation or function of the University or any of its component institutions, shall be subject to prompt and appropriate disciplinary action under this policy if (but only if) his status is such that he is not subject to the provisions of any trustee or Board of Governors policies governing suspension and discharge of faculty members.

Section 3. Responsibilities of Chancellors

(a) When any chancellor has cause to believe that any of the provisions of this policy have been violated, he shall forthwith investigate or cause to be investigated the occurrence, and upon identification of the parties involved shall promptly determine whether any charge is to be made with respect thereto.

(b) If he decides that a charge is to be made, he shall, within thirty (30) days after he has information as to the identity of the alleged perpetrator of the offense but in no event more than twelve (12) months after the occurrence of the alleged offense, (i) refer the case to the appropriate existing University judicial body, or (ii) refer the matter to a Hearing Committee drawn from a previously selected Hearings Panel which, under this option, is required to implement action for violation of Section 2 (a) or (b) of this statement. If the case is referred to an existing University judicial body under (i) above, the procedural rules of that body shall be followed, and subsections (c)

through (f) below shall not be applicable. If the matter is referred to a Hearing Committee under (ii) above, the procedural rules prescribed in subsections (c) through (f) below shall be followed.

(c) The accused shall be given written notice by personal service or registered mail, return receipt requested, stating:

(1) The specific violations of this policy with which the accused is charged.

(2) The designated time and place of the hearing on the charge by the Hearing Committee, which time shall be not earlier than seven (7) nor later than ten (10) days following receipt of the notice.

(3) That the accused shall be entitled to the presumption of innocence until found guilty, the right to retain counsel, the right to present the testimony of witnesses and other evidence, the right to cross-examine all witnesses against him, the right to examine all documents and demonstrative evidence adverse to him, and the right to transcript of the proceedings of the hearing.

(d) The Hearing Committee shall determine the guilt or innocence of the accused. If the person charged is found guilty, the Hearing Committee shall recommend to the chancellor such discipline as said body determines to be appropriate. After considering such recommendation the chancellor shall prescribe such discipline as he deems proper. In any event, whether the person is found guilty or not guilty, a written report shall be made by the chancellor to the president within ten (10) days.

(e) Any person found guilty shall have ten (10) days after notice of such finding in which to appeal to the president of the University. Such an appeal if taken shall be upon the grounds set forth in Section 5.

(f) Any accused person who, without good cause, shall fail to appear at the time and place for the hearing of his case by the Hearing Committee shall be suspended indefinitely or discharged from University employment.

(g) A chancellor, unless so ordered or otherwise prevented by court, shall not be precluded from carrying out his duties under this policy by reason of any pending action in any state or federal court. Should a delay occur in prosecuting the charge against the accused because the accused or witnesses that may be necessary to a determination of the charge are involved in state or federal court actions, the time limitations set forth above in this Section 3 shall not apply.

(h) Conviction in any state or federal court shall not preclude the University or any of its officers from exercising disciplinary action in any offense referred to in this policy.

(i) Nothing contained in this policy shall preclude the president or any chancellor from taking any other steps, including injunctive relief or other legal action, which he may deem advisable to protect the best interests of the University.

Section 4. Aggravated Acts or Threatened Repetition of Acts

(a) The chancellor of each of the component institutions of the University shall appoint an Emergency Consultative Panel which shall be composed of not less than three (3) nor more than five (5) faculty members and not less than three (3) nor more than five (5) students who shall be available to advise with the chancellor in any emergency. No member of such panel shall serve for more than one (1) year unless he be reappointed by the chancellor. The chancellor may make appointments, either temporary or for a full year, to fill any vacancies which may exist on the panel.

(b) If, in the judgment of the chancellor, there is clear and convincing evidence that a person has committed any of the acts prohibited under this policy which, because of the aggravated character or probable repetition of such act or acts, necessitates immediate action to protect the University from substantial interference with any of its orderly operations or functions or to prevent threats to or acts which endanger life or property, the chancellor, with the concurrence as hereinafter provided of the Emergency Consultative Panel established pursuant to (a) above, may forthwith suspend such person from the University and bar him from the University campus; provided, however, that in the event of such suspension, whether personally or by registered mail addressed to his last known addresses, and shall be afforded a prompt hearing, which, if requested, shall be commenced within ten (10) days of the suspension. Except for purposes of attending personally any hearings conducted under this policy, the bar against the appearance of the accused on the University campus shall remain in effect until final judgment has been rendered in his case and all appellant proceedings have been concluded, unless such restriction is earlier lifted by written notice from the chancellor.

(c) A quorum of the Emergency Consultative Panel provided for in (a) above shall consist of not less than four (4) of its members, and the required concurrence shall have been obtained if a majority of such quorum shall indicate their concurrence. The chancellor shall meet personally with members of such panel at the time he seeks concurrence, if it is feasible to do so. However, if the circumstances are such that the chancellor deems it not to be feasible to personally assemble such members, then he may communicate with them or the required number of them individually by telephone or by such other means as he may choose to employ, in which event he may proceed as provided in (b) above after the required majority of such members have communicated their concurrence to him.

(d) In the chancellor's absence or inability to act, the president may exercise the powers of the chancellor specified in this section in the

same manner and to the same extent as could the chancellor but for such absence or inability to act.

Section 5. Right of Appeal

Any person found guilty of violating the provisions of this policy by the Hearing Committee referred to in Section 3 shall have the right to appeal the finding and the discipline imposed upon him to the president of the University. Any such appeal shall be in writing, shall be based solely upon the record, and shall be limited to one or more of the following grounds.

(1) That the finding is not supported by substantial evidence;

(2) That a fair hearing was not accorded the accused; or

(3) That the discipline imposed was excessive or inappropriate.

It shall be the responsibility of the president to make prompt disposition of all such appeals, and his decision shall be rendered within thirty (30) days after receipt of the complete record on appeal.

Section 6. No Amnesty

No administrative official, faculty member, or student of the University shall have authority to grant amnesty or to make any promise as to prosecution or non-prosecution in any court, state or federal, or before any student, faculty, administrative, or trustee committee to any person charged with or suspected of violating Section 2 (a) or (b).

Section 7. Publication

The provisions of this policy shall be given wide dissemination in such manner as the president or chancellors may deem advisable, and shall be printed in the official catalogs which may be issued by each component institution of the University.

FIREARMS AND OTHER WEAPONS PROHIBITED

An act to protect persons on the property of any public or private educational institution from persons carrying firearms or other weapons was enacted by the 1971 General Assembly. This act, which is in full force and effect on the UNC campus, is as follows:

It shall be unlawful for any person to possess, or carry, whether openly or concealed, any gun, rifle, dynamite cartridge, bomb, grenade, mine, powerful explosive as defined in G.S. 14-284.1, bowie

knife, blackjack, metallic knuckles or any other weapon of like kind, not used solely for instructional or school sanctioned ceremonial purposes, in any public or private school building or bus, on any public or private school campus, grounds, recreation area, athletic field, or other property owned, used or operated by any board of education, school, college, or university board of trustees or directors for the administration of any public or private educational institution. For the purpose of this section a self-opening or switch-blade knife is defined as a knife containing a blade or blades which open automatically by the release of a spring or a similar contrivance, and the above phrase "weapon of like kind" includes razors and razor blades (except solely for personal shaving) and any sharp pointed or edged instrument except unaltered nail files and clips and tools used solely for preparation of food, instruction and maintenance. This section shall not apply to the following persons: officers and enlisted personnel of the armed forces of the United States when in discharge of their official duties as such and acting under orders requiring them to carry arms or weapons, civil officers of the United Sates while in the discharge of their official duties, officers and soldiers of the militia and the national guard when called into actual service, officers of the state, or of any county, city, or town, charged with the execution of the laws of the state when acting in the discharge of their official duties, any pupils who are members of the Reserve Officer Training Corps and who are required to carry arms or weapons in the discharge of their official class duties.

Any person violating the provisions of this Act shall be guilty of a misdemeanor and upon conviction shall be punished in the discretion of the court by fine or imprisonment or by both such fine and imprisonment, not to exceed five hundred dollars ($500) fine or six months imprisonment.

ALCOHOLIC BEVERAGES

State law regulates the possession and use of alcoholic beverages. Excessive and/or inappropriate uses, as defined by state law, are punishable by criminal penalty. Also, because the University community presents a separate and special context in which an environment compatible with academic endeavors must be preserved, additional University regulation of the possession and use of alcoholic beverages on campus is necessary and proper.

It shall be the responsibility of the chancellor or his delegate to adopt and enforce regulations covering the possession and use of alcoholic beverages on the campus of the University.

DRUG ABUSE

The illicit and improper use of certain drugs (for example, cannabis, amphetamines, barbiturates, opiates and hallucinogenic drugs) is incompatible with personal welfare and the pursuit of academic excellence and will not be tolerated by the University. Furthermore,

the illicit possession or transfer of these drugs is a state and/or federal offense, and the University will cooperate fully with appropriate authorities in the enforcement of the law.

The fundamental concern and responsibility of the University relative to the abuser of drugs is constructive rehabilitation. Within the limitations imposed by law, (Chapter 90, Section 111.3, and Section 113.6, Narcotic Drug Act, for example) the University will promote a program of education and encourage medical consultation in order to meet this responsibility. But it will act firmly through formal disciplinary procedures to control drug abuse in those instances where these measures prove insufficient.

Disciplinary action relative to drug abuse in the University will be administered by the University Discipline Committee.

DIRECTORY

THE UNIVERSITY OF NORTH CAROLINA
Sixteen Constituent Institutions

William Clyde Friday, B.S., LL.B., LL.D. ..... *President*

Raymond Howard Dawson, B.A., M.A., Ph.D. ..... *Vice President-Academic Affairs*

L. Felix Joyner, A.B. ..... *Vice President - Finance*

John L. Sanders, A.B., J.D. ..... *Vice President - Planning*

George Eldridge Bair, B.A., M.A., Ph.D. ..... *Director of Educational Television*

James L. Jenkins, Jr., A.B. ..... *Assistant to the President*

Edgar Walton Jones, B.S., M.S., Ph.D. ..... *Associate Vice President - Research and Public Service*

John P. Kennedy, Jr., S.B., B.A., M.A., J.D. ..... *Secretary of the University*

Arnold Kimsey King, A.B., A.M., Ph.D. ..... *Assistant to the President*

Roscoe D. McMillan, Jr., B.S. ..... *Assistant to the President for Governmental Affairs*

Richard H. Robinson, Jr., A.B., LL.B. ..... *Assistant to the President*

J. Lem Stokes, II, A.B., M. Div., Ph.D. ..... *Associate Vice President - Academic Affairs*

Robert W. Williams, A.B., M.A., Ph.D. ..... *Associate Vice President - Academic Affairs*

HISTORY

The University of North Carolina was chartered in 1789 and opened its doors to students at its Chapel Hill campus in 1795. Throughout most of its history, it has been governed by a board of trustees chosen by the Legislature and presided over by the governor. During the period 1917-1972, the board consisted of 100 elected members and a varying number of *ex-officio* members.

By act of the General Assembly of 1931, without change of name, it was merged with The North Carolina College for Women at Greensboro and The North Carolina State College of Agriculture and Engineering at Raleigh to form a multicampus institution designated The University of North Carolina.

In 1963 the General Assembly changed the name of the campus at Chapel Hill to The University of North Carolina at Chapel Hill and that at Greensboro to The University of North Carolina at Greensboro and, in 1965, the name of the campus at Raleigh was changed to North Carolina State University at Raleigh.

Charlotte College was added as The University of North Carolina at Charlotte in 1965, and, in 1969, Asheville-Biltmore College and Wilmington College became The University of North Carolina at Asheville and The University of North Carolina at Wilmington respectively.

A revision of the North Carolina State Constitution adopted in November, 1970, included the following:

"The General Assembly shall maintain a public system of higher education, comprising The University of North Carolina and such other institutions of higher educaton as the General Assembly may deem wise. The General Assembly shall provide for the selection of trustees of The University of North Carolina..." In slightly different language, this provision had been in the Constitution since 1868.

On October 30, 1971, the General Assembly in special session merged, without changing their names, the remaining 10 state-supported senior institutions into the University as follows: Appalachian State University, East Carolina University, Elizabeth City State University, Fayetteville State University, North Carolina Agricultural and Technical State University, North Carolina Central University, North Carolina School of the Arts, Pembroke State University, Western Carolina University and Winston-Salem State University. This merger, which resulted in a statewide multicampus university of 16 constituent institutions, became effective on July 1, 1972.

The constitutionally authorized Board of Trustees was designated the Board of Governors, and the number was reduced to 32 members elected by the General Assembly, with authority to choose their own chairman and other officers. The board is "responsible for the general determination, control, supervision, management and governance of all

affairs of the constituent institutions." Each constituent institution, however, has its own board of trustees of 13 members, eight of whom are appointed by the Board of Governors, four by the governor, and one of whom, the elected president of the student body, serves *ex officio*. The principal powers of each institutional board are exercised under a delegation from the Board of Governors.

Each institution has its own faculty and student body, and each is headed by a chancellor as its chief administrative officer. Unified general policy and appropriate allocation of function are effected by the Board of Governors and by the president with the assistance of other administrative officers of the University. The General Administration office is located in Chapel Hill.

The chancellors of the constituent institutions are responsible to the president as the chief administrative and executive officer of The University of North Carolina.

BOARD OF GOVERNORS
THE UNIVERSITY OF NORTH CAROLINA

William A. Dees, Jr., Chairman
W. Earl Britt, Vice Chairman
Louis T. Randolph, Secretary

Class of 1975

Clark S. Brown, Winston-Salem
Lenox G. Cooper, Wilmington
Mrs. Howard Holderness, Greensboro
John R. Jordan, Jr., Raleigh
J. Aaron Prevost, Hazelwood
Louis T. Randolph, Washington
William B. Rankin, Lincolnton
W.W. Taylor, Jr., Raleigh

Class of 1977

Victor S. Bryant, Durham
George Watts Hill, Sr., Durham
Wallace N. Hyde, Asheville
Robert B. Jordan, III, Mount Gilead
Mrs. Albert H. Lathrop, Asheville (deceased)
Reginald F. McCoy, Laurinburg
Maceo A. Sloan, Durham
Thomas J. White, Jr., Kinston

Class of 1979

W. Earl Britt, Lumberton
Julius L. Chambers, Charlotte
Dr. Hugh S. Daniel, Jr., Waynesville
William A. Dees, Jr., Goldsboro
Jacob H. Froelich, Jr., High Point
William A. Johnson, Lillington
E.B. Turner, Lumberton
Mrs. George D. Wilson, Fayetteville

Class of 1981

Hugh Cannon, Raleigh
Philip G. Carson, Asheville
T. Worth Coltrane, Asheboro
Luther H. Hodges, Jr., Charlotte
Mrs. Hugh Morton, Linville
David J. Whichard, II, Greenville
John W. Winters, Raleigh
George M. Wood, Camden

THE UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE
BOARD OF TRUSTEES

Chairman
Addison H. Reese, Charlotte

Vice Chairman
N.K. Dickerson, Monroe

Secretary
Mrs. Parks M. King, Jr., Charlotte

Assistant Secretary
Mrs. Juanita S. Sims, Charlotte

Ex-Officio Member
Edward D. Hendricks, President, Student Body Government

Term Expires June 30, 1975

F. Douglas Biddy, Durham
William E. Bluford, Charlotte
Frank H. Crowell, Lincolnton
N.K. Dickerson, Monroe
James A. Hardison, Jr., Wadesboro
Thomas H. Leath, Rockingham

Term Expires June 30, 1977

Mrs. J.T. Adair, Newton
Irwin Belk, Charlotte
C.C. Cameron, Charlotte
John L. Fraley, Cherryville
Mrs. Parks M. King, Jr., Charlotte
Addison H. Reese, Charlotte

THE UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE
ADMINISTRATIVE OFFICERS AND STAFF

Chancellor's Office

Dean Wallace Colvard, B.S., M.A., Ph.D. ..... *Chancellor*

Earl Leslie Backman, B.A., M.A., Ph.D. ..... *Assistant to the Chancellor*

Provost's Office

Frank Graves Dickey, A.B., M.A., Ed.D. ..... *Provost*

Joseph Floyd Boykin, Jr., B.S., M.S. ..... *Librarian*

Jordan Michael Scepanski, B.S., M.Ln. ..... *Assistant Librarian*

James Francis Matthews, A.B., M.S., Ph.D. ..... *Academic Research and Contracts Officer*

David Eugene Nixon, B.S., M.S., Ph.D. ..... *Director, Computer Center*

James Ronald Short, B.S.B.A. ..... *Coordinator of Information Systems*

Academic Affairs

Philip Elwin Hildreth, A.B., M.A., Ph.D. ..... *Vice Chancellor for Academic Affairs*

Seth Howard Ellis, A.B., A.M., Ph.D. ..... *Director of Summer and Evening Programs*

Robert Graham Anderson, B.Arch., M.Arch. ..... *Dean, College of Architecture*

Newton Hall Barnette, B.S., M.S., Ph.D. ..... *Dean, College of Engineering*

Sherman LeRoy Burson, B.S., Ph.D. ..... *Acting Dean, College of Science and Mathematics*

John Bryant Chase, Jr., A.B., M.A., Ed.D. ..... *Dean, College of Human Development and Learning*

Marinell Hargrove Jernigan, B.S., M.S., Ed.D. ..... *Dean, College of Nursing*

William Stephan Mathis, B.Mus., M.Mus., Ph.D. ..... *Dean, College of Humanities*

Allan Van Palmer, B.S., M.B.A., Ph.D. ..... *Dean, College of Business Administration*

Norman Willard Schul, B.S., M.A., Ph.D. ..... *Dean, College of Social and Behavioral Sciences*

James Lee Cox, B.A., M.P.A., Ph.D. ..... *Director, Institute for Urban Studies and Community Service*

Dorothea G. Lakin, B.A. ..... *Conference Coordinator*

Hoyle Henry Martin, B.A., M.A. ..... *Associate Director and Coordinator for Extension and Continuing Education Programs*

Larry George Owen, A.B., M.P.A. ..... *Associate Director*

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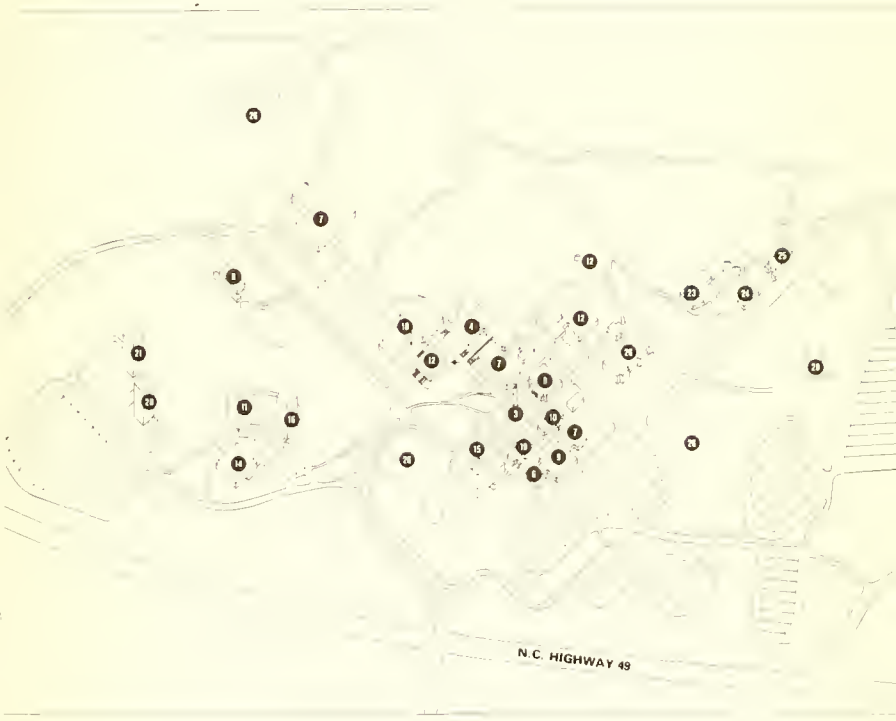

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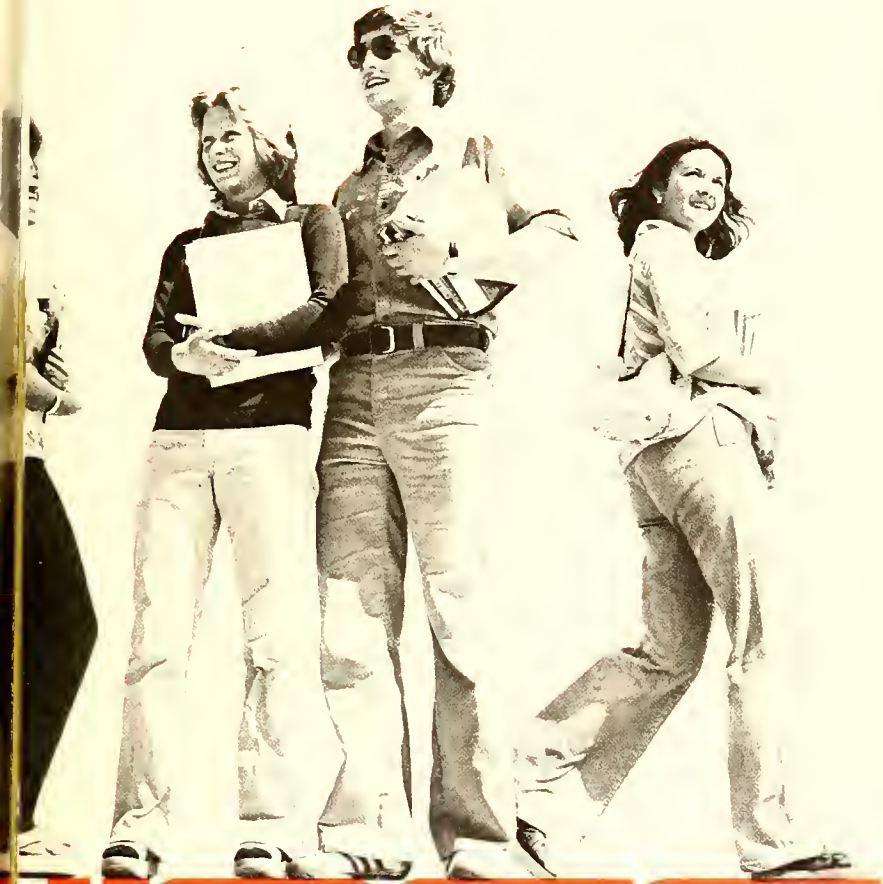

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If you need information on admissions policies, application forms, or wish to make an appointment for an interview, please write to one of the following:

Director of Freshman Admissions
The University of North Carolina
at Charlotte
UNCC Station
Charlotte, North Carolina 28223
AC 704/597-2211

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THE UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE

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THE UNIVERSITY

The University of North Carolina at Charlotte is a young and growing institution located minutes north of the largest urban center in the Carolinas, a city of more than 300,000.

Enrollment at UNCC for the 1974-75 academic year was 6,656 and reflected a growth of 8.7 per cent over the previous year, a 5.7 per cent higher rate than the national average.

Four high rise residence halls on campus house approximately 2,000 students. More than 4,000 students commute from Charlotte and the surrounding area.

The campus covers approximately 1,000 acres of rolling hills with forests, streams and ponds. Contemporary buildings are clustered at the central campus, which is easily accessible via major highways.

The University was created by the 1965 North Carolina General Assembly, which transformed Charlotte College into a campus of the University of North Carolina. The institution, now one of 16 campuses of the University of North Carolina System, can trace its lineage to 1946 and the Charlotte Center of the University of North Carolina.

A team of a chancellor, a provost, four vice chancellors and eight deans give leadership to the University and its eight colleges. Classes are taught by outstanding educators, basically young and highly motivated.

UNCC offers the degrees of Bachelor of Arts, Bachelor of Architecture, Bachelor of Science, Bachelor of Creative Arts, Bachelor of Science in Engineering, Bachelor of Engineering Technology, Master of Science in biology and chemistry, Master of Arts in Education, Master of Education, Master of Arts in geography and Master of Management.

PURPOSE

No formal statement of purpose has been adopted at UNCC in order to provide an atmosphere in which the University has freedom to grow and develop, but several principles have been agreed upon.

These principles include the decision to give first priority to undergraduate teaching and to provide graduate instruction and research opportunities in the basic natural sciences, the social sciences, the humanities, the fine arts, teacher education and certain professional areas.

The University is also dedicated to involve itself in intellectual and cultural exchange with the immediate community and the state of North Carolina.

In order not to limit its horizons to the boundary of the county, state or nation, however, the University emphasizes international issues, realizing that much of learning is international in origin and scope.

UNCC is committed to the concept of lifelong learning and provides opportunities for enrichment and renewal to members of the public in addition to those enrolled in degree and credit programs.

In its relationship with students, faculty, staff, alumni and the public, the University treats each person as an individual, respecting differences and guaranteeing individual rights of citizenship.

ACCREDITATION

UNCC is accredited, as a total institution, by the Southern Association of Colleges and Schools and also by the North Carolina Association of Colleges and Universities. Various programs within the university structure are accredited by the appropriate specialized accrediting agencies, including programs within the College of Engineering by the Engineers' Council for Professional Development, the College of Nursing by the National League for Nursing, and the Department of Chemistry by the American Chemical Society. The University's program for teacher education is approved for teacher certification by the North Carolina State Department of Education; the nursing program is approved by the North Carolina Board of Nursing.

EDUCATIONAL STRUCTURE

Each of the University's colleges deals with one or more academic areas to offer students more than 40 degree options in 25 departments. The colleges are Architecture, Business Administration, Engineering, Human Development and Learning, Humanities, Nursing, Science and Mathematics, and Social and Behavioral Sciences. The departments within the colleges are listed with the colleges in the "Courses of Study" section of this catalog.

THE CATALOG

The *Catalog* is not an irrevocable contract. Regulations within it are subject to change by the University at any time. University regulations are policy statements to guide students, faculty and administrative officers in achieving the goals of the institution. Necessary interpretations of these policies will be made by the appropriate authorities with the interests of the students and the institution in mind. Students are encouraged to seek information as they require it about the application of any policy.

NONDISCRIMINATION

UNCC will accept all qualified students, within budgetary limitations, without regard to race, creed, color, sex or national origin and recruits faculty and staff and conducts all programs on the same basis.

EVENING PROGRAM

The University offers a well-rounded evening program consistent with its daytime classes. Students may request any course in the *Catalog,* and if the director finds there is sufficient demand, the courses will be offered. Classes are held from 4 p.m. through 10:30 p.m. The Office of Evening Programs is open from 9 a.m. to 5:30 p.m. Monday through Friday. Individuals wishing to contact the director after 5:30 p.m. should telephone for an appointment. Requests for schedules, recommendations for offerings and other information concerning the evening program should be made to the Director of the Evening Program, University of North Carolina at Charlotte, UNCC Station, Charlotte, N.C. 28223.

SUMMER SESSION

The summer session is designed to present courses of the same quality as those offered in the regular academic year. These courses—selected according to the needs of regular students, students transferring from other institutions and students from the community—are presented in two terms of six weeks each. Short courses, workshops and institutes are also offered. For information concerning the summer session, write to the Director of Summer Sessions, University of North Carolina at Charlotte, UNCC Station, Charlotte, N.C. 28223.

APPLICATION DATES

Students interested in enrolling at UNCC should consult the schedule below for application dates. However, because of the number of applications received due to rapid growth, the University may be required to announce cutoff dates for applications which are earlier than those in the schedule.

Term of Entry	*Application Must Be Filed By*	*Application Must Be Completed By*
First Summer Term, 1976	May 1	May 15
Second Summer Term, 1976	June 15	July 1
Fall Semester, 1976	July 1	July 15
Spring Semester, 1976	December 1	December 15
First Summer Term, 1977	May 1	May 15
Second Summer Term, 1977	June 15	July 1

Other dates of interest to students and those considering enrollment appear in the following academic calendar:

Summer Presession: May 10-May 21

First Summer Session, 1976

May 24	Mon.	Residence halls open
May 25	Tues.	Registration. Last day to register without late penalty of $5.
May 26	Wed.	Classes begin
May 27	Thurs.	Last day to register or add a course
May 28	Fri.	Last day to withdraw from school or drop a course with refund
June 9	Wed.	Last day to drop a course without grade evaluation. Last day for Engineering students to drop a course.
June 25	Fri.	Last day to drop a course
June 30	Wed.	Last day of classes
July 1-2	Thurs.	Final examinations

Second Summer Session

July 6	Tues.	Registration. Last day to register without a late penalty of $5.
July 7	Wed.	First day of classes
July 8	Thurs.	Last day to register or add a course
July 9	Fri.	Last day to withdraw from school or drop a course with refund
July 21	Wed.	Last day to drop a course without grade evaluation. Last day for Engineering students to drop a course.
Aug. 6	Fri.	Last day to drop a course
Aug. 10	Tues.	Last day of classes
Aug. 11-12	Wed.-Thurs.	Final examinations

Short Session

June 14	Mon.	Registration
June 15	Tues.	First day of classes and last day to register
June 16	Wed.	Last day to withdraw from school or drop a course with refund
June 18	Fri.	Last day to drop a course without grade evaluation
June 30	Wed.	Last day to drop a course
July 2	Fri.	Last day of classes and/or final examinations

Eight-Week Summer Session

June 14	Mon.	Registration. Last day to register without a late penalty of $5
June 15	Tues.	Classes begin
June 16	Wed.	Last day to register or add a course
June 18	Fri.	Last day to withdraw from school or drop a course with refund
June 30	Wed.	Last day to drop a course without grade evaluation
July 5	Mon.	Holiday - no classes
Aug. 5	Thurs.	Last day to drop a course
Aug. 10	Tues.	Last day of classes
Aug. 11-12	Wed.-Thurs.	Final examinations

Fall Semester, 1976

Aug. 22	Sun.	Residence halls open for new students only and orientation begins
Aug. 23	Mon.	Faculty and Staff Convocation
Aug. 23-27	Mon.-Fri.	Orientation, advising, registration.

Aug. 24	Tues.	Residence halls open for continuing students
Aug. 27	Fri.	Last day to register without a late penalty of $10
Aug. 30	Mon.	Classes begin
Sept. 3	Fri.	Last day to register or add a course for credit
Sept. 6	Mon.	Labor Day (No Classes)
Sept. 10	Fri.	Last day to withdraw (or drop a course) with refund
Oct. 4-5	Mon.-Tues.	No classes
Oct. 20	Wed.	Reports of unsatisfactory grades by faculty
Oct. 29	Fri.	Last day to drop a course without grade evaluation. Last day for Engineering students to drop a course.
Nov. 8-12	Mon.-Fri.	Advising for spring semester, 1977
Nov. 24-26	Wed.-Fri.	Thanksgiving Holidays
Dec. 1	Wed.	Last day to file for May degrees
Dec. 3	Fri.	Last day to drop a course
Dec. 10	Fri.	Last day of classes
Dec. 13	Mon.	Final examinations begin
Dec. 17	Fri.	Final examinations end
Spring Semester 1977		
Jan. 4	Tues.	Residence halls open
Jan. 5-7	Wed.-Fri.	Orientation, advising and registration
Jan. 7	Fri.	Last day to register without a late penalty of $10
Jan. 10	Mon.	Classes begin
Jan. 14	Fri.	Last day to register or add a course for credit.

Jan. 21	Fri.	Last day to withdraw (or drop a course) with refund
Feb. 14-15	Mon.-Tues.	No classes
Feb. 25	Fri.	Report of unsatisfactory grades by faculty
March 9	Wed.	Last day to drop a course without grade evaluation. Last day for Engineering students to drop a course.
March 21-25	Mon.-Fri.	Spring holidays
April 4-8	Mon.-Fri.	Pre-registration for first summer session and advising for fall semester, 1977
April 19	Tues.	Last day to drop a course
April 26	Tues.	Last day of classes
April 27	Wed.	Reading day
April 28	Thurs.	Final examinations begin
May 4	Wed.	Final examinations end
May 7	Sat.	Commencement exercises

STUDENT ACTIVITIES

Students at the University of North Carolina at Charlotte are encouraged to participate in extracurricular activities. Student Body Government, University Program Board, campus publications and WVFN, the student radio station, are only a few of the activities available which can play a significant role in each student's development and total education. Participation in activities, ranging in type from service and religious to athletic and social, increases a student's opportunities to acquire leadership skills and to experience the responsibilities involved in functioning within a self-governmental process.

STUDENT GOVERNMENT

The Student Body Government provides students an early experience in governmental affairs. Students often find their work in student government a useful background for later public service. The history of student government is as old as the institution itself. The University encourages student participation in its affairs and has student representatives on many of the faculty and administrative committees. The leaders of student government are committed to representing the student body and to developing students' awareness of the many facets of life at their University. All students who are regularly enrolled at UNCC, whether on a part or full-time basis, are entitled to participate in student government.

The University has now developed two forms of campus governance involving students. The University Constitution provides for involvement of student, faculty and administrative officers in a community governance plan. Under this plan, student involvement in policy-making and government of the institution is significant. The principal element of this system is the University Senate in which elected and appointed student, faculty and administrative senators convene for the purpose of recommending to the chancellor such matters as objectives and plans for the University's long-range growth and development, policies for regulating University operations, and procedures for reviewing and appraising budget policies.

The University Court is required to have a minimum of two students among its total number of nine justices. This court entertains jurisdiction over all disputes arising out of a person's relationship to or citizenship with the University, and also serves as a court of appellate review for all lower courts within the University.

The other aspect of campus governance involving student participation relates to the separate composition of a traditional system of student government. At UNCC, Student Body Government comprises:

> *The Executive Branch* made up of the president, the vice president and the treasurer, as well as a number of committees appointed by the president.

The Student Legislature, composed of the vice president, the four class presidents, the residence hall presidents and commuter student representatives, representatives chosen by the respective students majoring in the several academic colleges of the University and graduate student representatives. The vice president serves as chairman of the Student Legislature and may vote only to break a tie.

The Student Judiciary, composed of the Student Superior Court, Residence Courts and the Elections Board. These bodies were established for the purpose of judging violations of the rules and regulations of the University, the student Constitution and the various student statutes and for administering the Honor Code. This code, adopted by the student body during the fall semester of 1965, reads as follows:

> Under the Honor Code you are on your honor not to cheat, lie, or steal; and if you see another student doing so, you are on your honor to report the individual and the circumstance to the appropriate student agency.

UNIVERSITY PROGRAM BOARD

The Program Board develops, administers and supervises the social, cultural, educational and recreational programs of an all-University nature for the students, faculty and staff. It provides an opportunity for students to participate in activities conducive to personal, social and educational development and tries to directly reflect student needs and interests. These programs include art exhibits, concerts, dances, coffee houses, travel programs, lectures, films and other special activities.

The Program Board consists of the chairperson, vice chairperson, secretary-treasurer, director of the Social Committee, director of the Rathskeller Committee, director of the Fine Arts Committee, director of the Films Committee, director of the Special Activities-Organizations Committee, and two members elected at-large from the student body. The chairperson and vice chairperson and two members at-large are elected in the annual campuswide spring elections. The directors are selected by an application-interview-election process during spring semester.

STUDENT MEDIA BOARD

The Student Media Board is comprised of student, faculty and administrative staff members, as well as representatives of the various student publications. Its purposes are to promote the objectives of each publication and to guarantee editorial freedom to the publications within the framework of responsible journalism. The individual media under the Media Board are as follows:

Sanskrit

Sanskrit is a magazine published several times each year by students interested in the arts. Creative work in writing, drawing, photography and other arts is welcomed by the editor. Students are invited to become members of the magazine staff.

Carolina Journal

Students publish a weekly newspaper, *The Carolina Journal,* to cover campus news and provide journalistic experience. Experience on a campus newspaper, together with a broad educational base, often provides the background for a career on a newspaper or a magazine. The campus newspaper provides a vital service to the entire University community by keeping its members informed of issues of common concern and interest.

Rogues 'n Rascals

The yearbook, *Rogues 'n Rascals,* is another publication which provides both a service to the University and an opportunity for student journalists to gain essential skills for later careers. The yearbook is designed to provide a valid picture of the spirit of campus life. It is valued as an organized pictorial record and as an opportunity for creative student journalists to produce a book which is aesthetically pleasing and representative of the student experience at UNCC. A copy of *Rogues 'n Rascals* is provided to all students taking eight or more semester hours of work each semester during the academic year. Others may obtain a copy upon payment of $8.50.

Radio Station WVFN

Radio Station WVFN was established during the 1970-71 academic year. The station's purpose is to provide practical experience to those interested in the field of broadcasting and broadcast journalism and to serve as an instrument for expression by students, faculty and administration concerning all facets of University life. WVFN is expected to achieve FM-Educational status during 1976.

ATHLETICS

The University of North Carolina at Charlotte is an independent member of the National Collegiate Athletic Association, playing a major university schedule. The 1975-76 edition of the 49ers faced the most demanding basketball schedule in the history of the University, taking on such national powers as N.C. State, Maryland, Vanderbilt, Creighton, Florida and Centenary. The University also fields intercollegiate teams in golf, tennis, cross country and women's volleyball.

UNCC boasts one of the finest physical education facilities in the nation. Designed primarily for the participant, the gymnasium features six indoor basketball courts, an Olympic-size swimming pool, handball and squash courts, weight and wrestling rooms, a well-equipped training room and lockers for 6,000 students and faculty. It will seat 4,000 spectators for basketball and other intercollegiate activities. In addition, the gym houses classrooms and an auditorium for audio-visual presentations.

A comprehensive program for intramural sports is offered to provide enjoyable recreational opportunities for the UNCC student body. The program includes team, dual and individual sports for both men and women, co-recreational activities and ample opportunities for unstructured "free play" activities. The gymnasium is open for student use throughout the week, at night and on weekends.

RELIGIOUS LIFE

The nurture of the spirit of man is considered an important part of student services, and many opportunities are given for students of all religious groups to hold discussions and programs. Individual student religious groups are encouraged and hold regular meetings on campus.

The program in religious life is made possible by voluntary contributions from a number of religious groups in Charlotte and North Carolina. It is carried out under the aegis of the United Religious Ministry at the University of North Carolina at Charlotte. The director of the URM serves as the coordinator of the University religious programs and activities and is available for counseling.

Assisting the director of the URM are University chaplains sponsored by denominational and other agencies, as well as selected clergymen from the churches of Charlotte who serve as "dorm ministers" and who are present for counseling. Currently there are two University chaplains, each of whom conducts a ministry in the name of his sponsoring church or churches.

The Baptist Student Union provides opportunities for students to plan and participate in experiences of Christian community, inquiry, worship, mission, witness and social action. Membership is open to anyone on campus regardless of religious affiliation. A council of officers is elected annually in the spring.

Regular meetings are held each Tuesday and Thursday from 1 to 2 p.m. Retreats, conferences, and work/ministry projects off campus are scheduled several times each year. Concerts and other special events are sponsored each semester on the campus.

Opportunities are available through BSU for small groups and individuals to participate in mission and church related work each summer, and for short term social action and ministry projects in other urban and non-urban areas as well as in Charlotte.

The Cooperative Christian Ministry in Higher Education is a united ministry for faculty, staff and students at UNCC and the wider Charlotte community. The work is sponsored by the United Methodist Church and the Presbyterian Church in the United States.

The URM works with all people on campus to share life, teaching, learning and the celebration of human community. The campus ministers and the director of the URM may be contacted through the University telephone exchange, extension 2344. An office for the URM and a small reading room are located in Sanford Hall.

ORGANIZATIONS

Academic

Alpha Kappa Psi is a national professional fraternity made up of students and faculty of the College of Business Administration. Membership is open to males upon presentation of evidence of satisfactory academic work. Professional and social activities are designed to promote fellowship and professional interest among members.

American Society of Civil Engineers-Student Club was organized for the purpose of meeting with practicing civil engineers, taking field trips, sponsoring civil engineers speakers and participating in Engineering College activities.

American Society of Mechanical Engineers-Student Club provides the same opportunities as above for students interested in mechanical engineering.

American Institute of Architects-Student Chapter provides opportunity for professional development of architectural students through contacts with local architects and attendance at local, regional and national conferences.

American Society of Personnel Administration-UNCC Chapter provides opportunity for exposure to the business community through speakers, tours, general rap sessions and monthly dinner meetings with the Charlotte Chapter of ASPA.

Beta Iota Mu, the Biology Club, was formed to increase knowledge and interest in the biological sciences, to utilize professional biologists and students in a process of mutually exploring problems of biology and to stimulate fellowship among students and faculty interested in biological sciences.

The Chemistry Society is open to students with a deep interest in chemistry and is designed to afford opportunity for members to become better acquainted, to secure the intellectual stimulation that arises from professional association and to install a professional pride in chemistry and chemical engineering.

Chez les Francais, the French Club, is open to all students interested in the language, customs and culture of the French people. Social and educational meetings are held for the purpose of broadening the members' knowledge of French civilization and increasing their conversational ability in the French language.

El Club Espanol is open to students interested in fellowship and conversation in Spanish. The meetings are informal and are usually conducted in both Spanish and English. Frequently, Spanish speaking guests talk to members of the club about the Hispanic countries. The students also participate in the presentation of plays, songs, dances and films.

The UNCC German Club was formed in 1972 and currently has about 25 members. Its purpose is to promote interest and participation in all aspects of German culture. To this end, it has, in the past year, sponsored a dramatic group which won first place in the Clemson University Drama Contest. To provide an opportunity in which German language can be practiced informally, the club hosts the Charlottenburger Stammtisch, held bi-weekly either at Gus's or in the Cone University Center. The club also sponsors German films.

The purpose of the *History Club,* founded in 1975, is to develop within interested students an increased individual awareness of the importance of history as a field of study and to create a bond among those students who have chosen history as their major field. Both academic and social functions are used to carry out this purpose.

The Engineers Club was the first organization founded for College of Engineering students. The Engineers Club served as a catalyst for the discipline clubs and produces a forum for interdisciplinary activities which are so important in the world today. The Engineers Club coordinates and produces the annual Engineering Fair.

The Society of Physics Students is open to all students who are interested in developing friendships with other members of the local scientific community. The activities of the society provide an additional medium through which students may advance their knowledge of science.

University Chapter of the Student National Education Association, which is affiliated with the North Carolina Education Association, is to inform students of the possibilities offered in the field of education, to encourage qualified students to become teachers and to provide students with an opportunity to discuss educational issues and problems.

The Student Nurse's Association is a national organization open to all students majoring in nursing. The SNA is affiliated with the district, state and national organization and is actively supported by students and faculty of the College of Nursing. Meeting once a month, the SNA endeavors to increase a sense of individual responsibility for creating and maintaining high ideals of nursing students.

Other academic clubs are:

Accounting Club
Geography Club
History Club
Institute of Electrical and Electronics Engineers-Student Chapter
Math Club
Nu Sigma Alpha - Law Enforcement Fraternity
Sociology Club

Physical

The Fencing Club is organized to promote interest in the sport of fencing.

The Football Club has an active membership and plays a full fall intercollegiate schedule.

The Outing Club organizes hiking, rappelling, canoeing and other outdoor excursions.

The Scuba Club is open to all students and faculty as well as those persons trained through UNCC. Non-divers are encouraged to join in order to improve their aquatic skills, participate in social activities and travel inexpensively with the club. As a member of the larger Piedmont Diving and Rescue Association, the Scuba Club has diving rights at three quarries spread throughout the Piedmont section of North Carolina.

The Soara Aero Club, Inc. is open to all students and faculty interested in flying.

Social Fraternities and Sororities

The University has an active and flourishing fraternity and sorority system. Guided by representatives of each fraternity or sorority, the Interfraternity Council and the Panhellenic Society, respectively, guide and coordinate the activities and organizational concerns of their constituents.

The following national fraternities have been chartered for UNCC: Chi Phi, Kappa Alpha Psi, Kappa Sigma, Lambda Chi Alpha, Omega Psi Phi, Pi Kappa Phi and Sigma Phi Epsilon.

The national sororities affiliated with the campus are Alpha Delta Pi, Delta Delta Delta, Delta Sigma Theta, Delta Zeta and Zeta Tau Alpha.

One local fraternity Delta Kappa, is working toward national affiliation.

Service

Civinettes is a girls' service club whose membership is open to any interested girl. The club is active in school, community and international

Civitan projects. One of the most important community service projects the Civinettes have participated in is the United Way Campaign. Other community service projects they have been involved in include raising money for the National Association for Retarded Children, giving a party for boys and girls from a children's home and helping sponsor a Bloodmobile at UNCC. Civinettes have been active in campus affairs, also. They have undertaken a project to recycle paper on campus, to paint and place trashcans for papers at different locations on the UNCC campus and to serve as ushers for the University Forum.

Other service clubs include Circle K and the Crescents.

Musical

The University Chorus has added much to the atmosphere of the school. Students enrolled in choral groups meet regularly with the dual purpose of enjoying singing together and improving their own musical abilities. The Chorus furnishes musical programs for special events during the year. All students are eligible to enroll for one semester hour of credit without audition.

Political

The Young Democrats Club and the Young Republicans Club give the student an opportunity to engage in practical politics as well as to hear speakers from local, state and national levels of our political parties. Membership is open to all interested students.

Religious

Student religious groups on campus include the Baptist Student Union and the Christian Science Organization.

Special Interests

The Black Student Union, an organization of Black students, undertakes projects of awareness and involvement in the Black community in cooperation with the Black Studies program at UNCC.

Children of the Sun, the Black gospel choir, preserves and promotes Black music.

The Commuter Association was chartered in the spring of 1975 to bring commuting students together, to promote services programs for commuters and to serve as a voice for the commuter populaton to the rest of the University community.

University Forum Council

The University Forum provides a campus platform for outstanding national figures to examine key issues in depth. The University Forum Council, composed of representatives from the student body, the faculty, the administration and the community, sponsors the Forum each year. Usually held during the spring semester, the Forum was initiated in 1966.

HONORS AND AWARDS

A number of individual student honors and awards for academic achievement, leadership and service are given annually through the various colleges and on a University-wide basis. Currently, there are two campus honoraries, the Society of 49 and Phi Alpha Theta.

The Society of 49 was created for the purpose of recognizing outstanding leadership and achievement among students who have made significant contributions to the development of the University community. Twenty-four to 30 students are selected each year, 75 percent of whom are seniors and 25 percent of whom are juniors. Selection is primarily based on a point system which considers academics, leadership, service and activities. The student receiving the highest number of points is given the Cindy Holmes Award in memory of the late Cindy Holmes whose unselfish contributions to the University represent the highest ideals of the Society.

Phi Alpha Theta, which has chapters in the United States, Canada and the Philippines, has as its purpose to encourage the study or history and to acknowledge academic achievement in history. To be eligible for membership, undergraduates must have completed at least 12 semester hours in history with a grade average in all history courses of 3.1 or better, an overall grade average of 3.0 in other courses, and must rank in the upper 35 per cent of their respective classes. Graduate students who recently received their undergraduate degrees may apply on the basis of their undergraduate records. Graduate students who are not recent graduates must have completed at least one-third of the requirements for the Master's degree (at least 10 credits in history) and have a straight *B* average or better.

CHANCELLOR'S LIST

The Chancellor's List is a record of all students whose academic record merits special recognition from the University. In order to qualify for the Chancellor's List, a student must take a full program (at least 15 semester hours of work) and maintain a quality point average of at least 3.00 (a grade of *B* with no grade lower than a *C*).

COMMENCEMENT MARSHALS

The juniors who have the highest scholastic averages are honored by being named commencement marshals. The marshal who has the best academic record is designated chief marshal. For the purpose of this selection, the University considers as juniors those students who will have completed 89 hours of degree work at the end of the spring semester. Juniors who have not completed their last two semesters of work or their last 24 credit hours at the University of North Carolina at Charlotte shall not be considered as eligible as marshals.

GENERAL ALUMNI ASSOCIATION

The General Alumni Association of the University of North Carolina at Charlotte is the recognized official alumni organization. Graduates of the University are encouraged to become contributors to the Alumni Association so that the University may maintain lifelong contacts with each individual. Graduating seniors of the University of North Carolina at Charlotte are eligble for membership in the General Alumni Association.

Membership can help the student maintain friendships of college days and obtain useful information from the University about programs and social activities. The General Alumni Association is a Patron of Excellence of the University and contributes to worthy projects. Thus, the alumnus can support Alma Mater in a useful and efficient way.

A magazine is provided to contributing members of the Alumni Association, and group tours to vacation spots, such as Hawaii, are organized.

The graduate should notify the Alumni Office of address changes and significant events in his or her life, such as marriage, births, new positions and honors. In this way, adequate records can be maintained, and the Alumni Office can pass good news along to friends of the alumnus.

FACILITIES AND SERVICES

FACILITIES

Department of Public Safety

The Department of Public Safety, located in the Reese Administration Building, is designed to serve the students, faculty and staff of the University and to protect their persons and property. Police service to the University community is provided 24 hours a day, seven days a week. *Campus Police Officers are commissioned by the attorney general of North Carolina and have full police powers on campus.* Ninety percent of these officers are students, either at UNCC or other institutions, and are sympathetic with the problems of students.

The department provides the University community with a number of other services which bring the department into many areas in what are not normally considered police activities. Assistance for minor car troubles, transportation of sick and injured to the Health Center, operating a "lost and found," delivering emergency messages and assisting owners in gaining entry into locked vehicles are examples of these activities. Guards are assigned to the residence halls for the protection and service of the resident students. In addition to periodic checks of the dorms during the evening and night, the dorm guards have duplicate keys to assist students locked out of their rooms, and the officers maintain a petty cash box for change purposes.

Generally, access to all buildings and all rooms during non-class hours may be gained only with the written permission of a faculty member. Campus Security should be contacted to gain entrance into a locked room.

All cars parked on campus must be registered and display a UNCC decal. Meters are available for visitors. Copies of regulations with campus maps are available upon purchasing a decal or a request at the Traffic Office. Parking regulations are in effect 24 hours a day. Temporary permits are available from Security for guests or for a student's vehicle that is only temporarily on campus or one used while a registered vehicle is being repaired.

Safety Coordinator

Another important service offered by the Department of Public Safety is the promotion of safety and accident prevention through the work of a safety coordinator.

It is the responsibility of the coordinator to investigate accidents on campus, conduct safety inspections of all buildings, maintain all reports required by the N.C. Department of Labor and to generally ensure that all persons within the University community are provided with a safe and healthful environment, conducive to the prevention of illness or injury.

Those who have complaints or knowledge of safety hazards are invited to bring them to the attention of the safety coordinator without fear of retaliation. All complaints or notification of hazards will be acted upon and the employee or student notified of the response.

Emergency Numbers

Do not hesitate to contact the Campus Police Office in the event of a problem. In addition, your observations and criticisms of our service are valuable in the continuing process of review, analysis and evaluation. The director of the Department of Public Safety invites your visits and your comments.

Emergency numbers are:

CAMPUS POLICE	597-2200
HEALTH SERVICE	(24 hours a day) 597-2265
OPERATOR	(On campus dial "O") 597-2000
MECKLENBURG COUNTY POLICE	9-374-2391
SAFETY COORDINATOR	597-2449

University Residence Halls

UNCC on-campus housing offers students an experience filled with opportunities. Four high-rise residence halls, housing approximately 500 students each, are designed to provide each student with both a degree of privacy and the opportunity to enjoy the close relationship of small group living. Professional staff members, as well as student floor

advisers, are committed to working with students in the development of a sense of community conducive to academic and personal growth through programming, advising and acquainting students with the many resources of the University.

Each room includes study and sleeping areas for two students, equipped with built-in dressers, study desks, chairs and closets. In addition, each floor is equipped with a central lounge, study, typing and seminar rooms. Two high-speed elevators service each air-conditioned residence hall.

The main floor contains the office of the resident coordinator, student mail boxes, a concessions area, library, lounge and student government offices. The lower floor contains a recreation room and laundry room.

The University has no requirement regarding on-campus residence. However, space is limited and is filled early. If a student plans to live in the residence halls, he or she should apply as soon as possible. An application form will be sent to the entering student at the time of his or her final admission to the University. A $50 pre-payment must accompany each application.

Library

The J. Murrey Atkins Library is at the center of the development of the University of North Carolina at Charlotte. A major addition to the facility, the 10-story Dalton Library Tower, was constructed in 1971 giving the University the room necessary to develop a truly outstanding collegiate library.

The library has a collection of approximately 225,000 volumes, with a capacity of more than 500,000 volumes. There are, in addition, approximately 300,000 units of microform.

More than 5,000 current periodicals and serials are received through subscriptions. Back files of certain periodicals and newspapers—such as *The New York Times, The Charlotte Observer, The Charlotte News* and *The Wall Street Journal*—are available on microfilm.

The Library of Congress classification system is used for the arrangement of books and periodicals.

Also available to the University Community are a number of special collections.

A depository since 1964, the library now has a collection of 60,000 U.S. government documents with hundreds of new publications arriving each month. The library also has available some United Nations documents.

An archives collection, located in the vault, includes manuscripts, photographs and other materials relating to the history of the University. Also found there is the Rare Book Collection, which contains literary first editions, early printed works, fine press books and a large number of seventeenth and eighteenth century English plays.

A Caroliniana collection of reference materials relating to North and South Carolina is located in the lobby.

The library also administers the University's Oral History Program. Tape-recorded interviews with a number of distinguished citizens of the Piedmont have been conducted, and these are available for use by the Library's clientele.

Library materials assigned for class reading are housed on the tenth floor of the Dalton Book Tower. Sound recordings, audio-visual media, college catalogs, and education curriculum materials are also located there.

In addition to materials directly related to classroom work, the library provides students with general and recreational reading. Comfortable reading areas are located throughout the building. In addition, student carrels and tables are available for concentrated study. Persons doing special research may apply for private study rooms located in the tower.

Exhibits on topics of special interest to the campus and the community are featured in display cases on the main and second floors. There is also an excellent art collection dispersed throughout the Library including sculpture, oils, lithographs, watercolors and etchings.

The Friends of UNCC have played a significant role in developing the library collection. Individual donors have also contributed greatly to the growth of the J. Murrey Atkins Library.

Bonnie E. Cone University Center

The Cone University Center is a place where you can meet informally with members of the faculty and staff, with friends, make new acquaintances, lounge between classes, participate in student activities, eat, and, in general, its a very comfortable place to spend your free time.

Within the University Center are located the offices of the Student Body Government, Carolina Journal, WVFN, Sanskrit, Rogues and Rascals, Black Student Union, Student Financial Services, dean of students and the administrative offices for the University Center.

Some of the services and facilities that you will be using include: Gamesroom Information Desk, the Little Gallery, meeting rooms with facilities for dances, lectures, films and banquets.

Rathskeller

The Rathskeller is located beneath the Residence Hall Cafeteria. Within it is a snack bar which serves pizza, sandwiches made to order, hot dogs, hamburgers and ice cream. The Rathskeller Program Committee offers a wide variety of entertainment for your enjoyment including: movies, coffeehouses, foosball and TV viewing. It is the perfect place for your evening entertainment and social enjoyment.

Bookstore

In addition to required textbooks, the campus bookstore makes available paperback books for leisure reading, records, sweatshirts and jackets, campus emblems, personal grooming items and routine school supplies and offers film developing and printing service.

SERVICES

Transportation

Charlotte City Coach Lines provides bus transportation from Charlotte to the campus on a regular schedule connecting with established routes. Detailed information regarding routes, times and fares may be obtained from the main office of the Charlotte City Coach Lines or at the University Bookstore. Weekly passes may be purchased at either location.

University Counseling Center

The University Counseling Center offers the services of professionally trained counselors and psychologists to the University community without charge. Initial counseling appointments may be arranged in Room 06 of the Atkins Building or by calling 597-2104. All counseling interviews are treated in a confidential manner.

The aim of the Counseling Center is to help individuals to gain greater self-understanding, to deal effectively with important decisions and to resolve current problems. The counseling process is individualized for each person to meet his particular needs. It may include individual sessions with a professional counselor, group meetings, use of standardized tests of interests, aptitudes and personality characteristics, or utilization of an extensive occupational-educational library. The staff is also available for consultation to University faculty, groups and agencies.

In addition, the Counseling Center offers special services in reading and study skills. The contents of the programs are offered to both group and individual bases to meet the specific needs of individual students. Group programs concentrate on short sessions in speed reading, study skills, note taking, brief writing and effective listening. Students are offered the opportunity to continue the group programs on an individualized basis in an open atmosphere. Individualized studies can be broadened to include vocabulary development, spelling, reading and listening improvement, mathematics and English. The program is administered by a professionally trained Educational Services Clinician in cooperation with the center's psychologists and counselors.

Placement

The Placement Office (located in Room 01, Atkins Library) functions as the central placement agency for the campus and serves under-

graduates, graduate students and alumni by assisting them in developing their career objectives (preferably beginning with their admission to the University) and in obtaining employment. Services include career planning and guidance; advising on the techniques of employment prospecting, on job selection and analysis, on interviewing, on the preparation of resumes and writing business letters; maintaining, for student browsing, files of information on prospective employers (business firms, governmental agencies, school systems) and on graduate school fellowships and assistantships; providing liaison between employers or graduate schools and graduates through on-campus recruiting by employers and graduate school representatives and by individual referral for current employment openings.

Students who wish to earn part of their educational expenses or to gain work experience may register for part-time, full-time or summer employment off campus. Every effort is made to assist the student who expresses a need for employment and, where possible, to place him in a position relating to his vocational goal.

Degree candidates register with the Placement Office on a voluntary basis early in their graduating year by completing a resume and requesting three professors and/or employers to complete evaluations on forms provided by the Placement Office. At the present time, these credentials are retained on a permanent basis.

The Family Educational Rights and Privacy Act of 1974 provides that the release of these credentials or information in the file must be authorized in writing by the registrant unless the information is a matter of public record, and that under certain conditions each student may have the right to review his/her placement file (resume and evaluations) and to obtain a copy of it for a fee.

All employers and schools interviewing on campus or listing openings with the Placement Office must indicate that they are equal opportunity employers, that is, that in hiring, compensation, promotion, training or admission they do not discriminate on the basis of race, color, religion, sex or national origin.

Computer Center

The Computer Center provides digital computer support to the academic and administrative programs at the University. Less than 20 years ago the use of computers was at its infancy, and now it has been said that this is the "Computer Decade." In fact, the computer revolution has been compared in its impact on society to the industrial revolution. Students are encouraged to learn about computer utility through use of the resources in the Computer Center. These resources include a Burroughs 5500 Computer System, a terminal connection to the Triangle Universities Computation Center and a variety of software.

Use of the computer is widespread at UNCC. Examples of its use in academic areas are the study of programming languages in computer science, statistical analysis of data files for sociology, history, political science and psychology, transportation problem solving in geography,

and molecular analysis in chemistry. Examples of its use in administrative areas are maintenance of vendor and budget files for the business office and the processing of student information for the Records and Admissions Office.

Health Service

The University Health Service, housed in a new building completed in 1971, is operated 24 hours a day, seven days a week. The new building has a capacity for 22 patients, with eight semi-private rooms and six private rooms. A physician is employed on a full-time basis. He has regular hours daily and is on call for emergencies. Registered nurses are on duty at all times.

The Health Center offers comprehensive care to all students with referral available when the services of a specialist are required.

Food Service

Resident students contract for room and board which provides three meals each day on either a five-day or a seven-day plan, as they choose. These students are permitted to take meals at any one of the four food service locations on campus: the Residence Halls Cafeteria, the University Center Cafeteria, the Denny Snack Bar, or the Rathskeller. A dollar allowance is given for meals taken in other than the Residence Halls Cafeteria and resident students pay cash for anything over the established amount.

Commuter students have several options for eating on campus. They may purchase a meal ticket and be on the same basis as the resident student with the transferability privilege. This is accomplished by going to the Office of Special Services in Rowe Building and making the necessary arrangements. In addition, the commuter student may purchase all his meals for cash at the University Center Cafeteria, the Denny Snack Bar, or the Rathskeller.

Vending machines are located throughout the campus, and the vending area in the University Center has a micro-wave oven for heating items available in the machines.

Hours of operation of all food service units are posted in each unit. Generally speaking, food service of one kind or another is available on campus from 7:00 a.m. to 11:00 p.m.; vending is, of course, available whenever buildings are open.

Institute for Urban Studies and Community Service

Director: James L. Cox
Research Director: W. Patrick Beaton
Associate Director for Community Service: Larry G. Owen
Associate Director for Continuing Education: Hoyle H. Martin
Assistant Coordinator for Continuing Education: Dorothea G. Lakin
Assistant Coordinator for Continuing Education: Jan W. Shefter
Institute Associate: Mary Dawn Liston
Administrative Assistant: Jane A. Begole

The Institute for Urban Studies and Community Service conducts a variety of programs which provide faculty and students with opportunities to become involved in urban research, community service, and continuing education programs. College and departmental faculty participate along with Institute staff on numerous projects funded by contracts and grants. Students can become involved in these projects as part-time research assistants. Student participation in Institute projects can also provide the basis for term papers, graduate theses, and internships.

The Institute formulates its long-term efforts with the advice of an advisory committee composed of prominent persons from the public and private sectors from the Metrolina region which meets several times each year. It also cooperates with urban centers at the University of North Carolina at Chapel Hill and North Carolina State University at Raleigh in an effort to develop jointly planned programs. In 1975, this cooperation led to a statewide conference on "Growth Options for North Carolina." During 1976, a similar conference is planned dealing with mass transit.

Recent research projects sponsored by the Institute included studies of the relationship of multi-county regional organizations to North Carolina state and local government, the relationship of growth patterns to energy consumption, disaster planning, and the impact of neighborhood racial transition on property values. Current efforts include the development of a statewide study of multi-county regionalism and a study of "paratransit" alternatives. The Institute also began publishing a newsletter on regionalism entitled "North Carolina Regional News" in the Fall, 1975.

The community service role of the Institute focuses upon community education, in-service training programs for public administrators and technical assistance to city and county governments. These activities recently included a report on alternative systems of representation in consolidated city-county governments and a series of workshops for the Mecklenburg County Board of Commissioners on governmental reorganization. Through the Metrolina Public Affairs Education Program, the Institute provides non-credit seminars and short courses for public administrators on topics such as "public management development" and "management by objectives." During 1975-76, a community education program on "land use problems" was conducted.

Finally, the Institute has major responsibility for continuing education at UNCC. It is responsible for coordinating and providing administrative support to extension (off-campus credit) courses and non-credit continuing education conferences, institutes, short courses, workshops, seminars and special training programs. During 1974-75, more than 4,000 persons participated in UNCC extension and continuing education programs coordinated through the Institute.

Learning Resources Center

The Learning Resources Center provides assistance to University students and faculty in increasing their knowledge and skills in the use of communications media. The staff is available to consult, teach and assist in the production and presentation of media programs.

The Learning Resources Center has a complete inventory of audio-visual equipment to be used for University sponsored activities. Services available include: overhead transparency production, television production, slide production, audio tape recording and duplication, film rental, free film circulation, dry mounting and laminating and multi-media production.

The Center is located in Atkins 200, across from the UNCC Bookstore, and is open from 7:30 a.m. to 5:00 p.m., Monday through Friday.

ADMISSION PROCEDURES

ADMISSION TO THE UNIVERSITY

The University considers all applications without regard to race, color or sex. It reserves the right to withhold the admission of any applicant who fails to meet any of the requirements for admission. In addition, it reserves the right to restrict enrollments when necessary because of budgetary or other constraints. Applications for either regular semester or the summer terms should be submitted and completed no later than the dates published on page 3. In some programs, the vacancies will be filled several weeks prior to those deadlines.

The Admissions Decision

All applications for admission are reviewed as soon as the required credentials are received. All relevant factors are considered, with major emphasis being placed on the academic history of the applicant. The intent of the University is to offer admission to those applicants whose credentials indicate a strong likelihood for success in their selected curricula.

Offers of admission are *conditional* until all required credentials such as final transcripts and the medical report form have been received. The failure of an applicant to supply such evidence may result in the revocation of the offer of admission.

Undergraduate students should address their requests for applications and information to the Director of Undergraduate Admissions, UNCC, Charlotte, North Carolina 28223. Inquiries concerning post-baccalaureate or graduate study should be made to the Director of Graduate Studies, UNCC, Charlotte, North Carolina 28223.

REQUIREMENTS FOR UNDERGRADUATE ADMISSION

General Requirements

1. Satisfactory evidence of good character.

2. Evidence of good physical and mental health. A medical report form is sent to successful applicants along with the notice of conditional admission. The completed form must be accepted by the University Health Service before an admission can be made final.

3. Satisfactory record of scholastic achievement.

4. Application fee of $10, which is neither deductible nor refundable.

5. The applicant bears the responsibility for supplying the University with all required credentials.

Requirements for consideration for admission to Freshman Standing:

1. Transcript of Secondary School study which identifies the applicant as a graduate of an accredited secondary school and bears a recommendation by a school official. Lack of any recommendation will make it necessary to return the record to the school for completion. The record should show the grades through the 11th year, senior year courses in progress, rank in class and pertinent test data. A high school equivalency certificate may be submitted in lieu of a secondary school diploma.

2. Sixteen acceptable units, 13 of which must represent basic academic courses. The suggested distribution is: English (4); algebra and geometry (3); one foreign language (2); social sciences (2); natural science (1); and electives (4). Emphasis will vary according to the college or program into which admission is sought. Engineering and Architecture applicants must present algebra, trigonometry, plane and solid geometry, or the equivalent in integrated courses. Nursing applicants must present biology and chemistry.

3. An *official* score report from the American College Testing Program (ACT) or the Scholastic Aptitude Test of the College Entrance Examination Board (SAT).

4. Transfer applicants who present fewer than 24 hours of transferable work are considered *applicants for freshman standing* and, in addition to the requirements listed above, they must have attained at least a *C* average in their post-secondary study, as evidenced by official transcripts mailed directly to the Office of Undergraduate Admissions by each institution attended. A Confidential Statement is required from the last institution regularly attended.

Early Admission

The University will admit specially talented high school students after they have completed the eleventh grade (achieved bona fide senior status as defined by their respective school systems) providing they meet other standards required for freshman admission.

A letter of recommendation from the student's secondary school principal is required for consideration for early admission.

Scholastic Aptitude Tests

While the University recognizes that test scores are less important than academic history in predicting the chances for collegiate success, applicants are expected to meet minimum score requirements, as follow:

SAT - A total score of 800, with neither the Verbal nor the Math scores below 350. A Math score of 450 or higher is expected of applicants for the programs in Architecture and Engineering.

ACT - A composite score of 18 except that applicants for programs in Architecture and Engineering are expected to present a Math score of 20 or higher.

Students may obtain test information and application forms from their school counselors or by writing to:

American College Testing Program
P.O. Box 168
Iowa City, Iowa 52240

Educational Testing Service
P.O. Box 592
Princeton, New Jersey 08540

Educational Testing Service
P.O. Box 1025
Berkeley, California 94701

Admission of Transfer Students

Applicants who have attended other post-secondary institutions *without earning at least 24 semester hours in transferable courses* are considered to be applicants for freshman standing. (*See preceding section.*)

Requirements for consideration for admission of Transfer Students:

1. Official transcripts must be mailed directly to the Office of Undergraduate Admissions by each post-secondary institution an applicant has attended.

2. An official secondary school transcript.

3. Confidential Statements from the last institution regularly attended.

Applicants for transfer admission must present a minimum academic average of *C*, based on *all* post-secondary courses attempted. Applicants for the programs in Engineering Technology, Nursing and the General Criminal Justice concentration within the Criminal Justice Program will find other conditions for admission and/or advanced standing in those programs described in the following paragraphs.

Engineering Technology

Technical institute graduates who wish to enter the engineering technology program at the University of North Carolina at Charlotte must meet the following requirements:

(1) Earn an Associate in Applied Science degree, or its equivalent, in a field appropriate to the option which the student plans to enter.

(2) Achieve an overall quality-point average of at least 2.2 (based on the 4.0 scale) on all courses taken at the technical institute. Exceptions to this requirement will be considered on the basis of individual merit.

(3) Complete satisfactorily the prerequisite background courses for the option which the student plans to enter.

Acceptance of the A.A.S. degree indicates the acceptance of 64 semester hours toward the Bachelor of Engineering Technology degree only. These hours become invalid when a student transfers to any other degree program.

Nursing

Registered nurses who are currently licensed to practice nursing and who meet University requirements for admission as freshmen or transfer students are considered for admission to the College of Nursing. Advanced standing in nursing will be awarded on the basis of achievement demonstrated by qualifying examinations administered after admission to the College of Nursing.

Criminal Justice

Graduates of two-year institutions who wish to enter the General concentration, which is one of the four concentrations offered in the Criminal Justice Program, must have earned an A.A.S. degree with a major in a criminal justice area.

Upon acceptance of the A.A.S. degree, the successful applicant is granted 64 semester hours which are valid only toward the General concentration.

Admission to other than Freshman or Transfer status:

Auditors

Any student eligible for admission to the University may register as an *auditor* for any class in which space is available. The fees and procedures are the same as those for a credit enrollment.

The participation of auditors in class discussion and in tests or examinations is optional with the instructor. Auditors receive no University credit but they are expected to attend class regularly. Notation of an audited course on the student's permanent record is made, but no grade will be given.

The procedure for adding or dropping an audit course is the same as for credit enrollments.

Special Students

Special students are those who are not candidates for degrees and who do not file complete academic credentials. They may enroll in undergraduate courses at UNCC until they have attempted a total of 18 semester hours with grade evaluation, but regular degree students will have preference for a place in classes. They are expected to conform to the standards required of all students. After reaching the 18 hour

limitation, special students must be reviewed and be acceptable for regular degree status before enrolling again at UNCC.

Special students who have done previous college work (including UNCC) must be eligible to return to the institution last attended.

The student must be 18 years of age or over and must understand at the time of his registration that the work completed in special student status will be evaluated in terms of major department and degree requirements only after the student's formal admission to a degree program.

Former Students

A student must make application for readmission to the University if he did not complete the last *regular* semester, fall or spring, prior to the semester or summer term for which he wishes to register. Applications should be filed at the Undergraduate Admissions Office in accordance with the published application dates.

Readmissions decisions are based on a review of the student's complete University record, with major emphasis given to the academic history and the probability for success in the major department and in terms of the general degree requirements.

Admission of Transient Students

Students enrolled at other colleges and universities who have the written permission from their institutions to take specified courses at the University in a given semester term may be enrolled as transient students.

College Credit in Escrow Program

The Escrow Program provides an opportunity for highly qualified students to take college credit courses while enrolled in secondary school. Records of credit earned will be maintained for use at the University or at another institution of higher learning.

Applicants recommended for participation in the Program usually have shown great ability in particular academic areas. The recommendations are normally made through the office of the superintendent of the school district.

Requests for additional information and application blanks should be directed to the Office of Undergraduate Admissions at UNCC.

Second Baccalaureate Degree

Admission

A student earning his first baccalaureate degree at the University of North Carolina at Charlotte may continue his studies toward a second baccalaureate degree by filing an approved *Declaration of Program* at the Office of the Registrar UNLESS there is a lapse in enrollment

between completion of the first degree and completion of the second degree.

Students holding baccalaureate degrees from other institutions, and other UNCC degree holders, must make application for admission to the second degree program by the admissions date published in the University calendar and be approved by the appropriate department chairman and college dean.

Requirements

1) The major field and degree must be different from the first and all requirements for both the major and the degree satisfied.

2) A minimum of 24 semester hours beyond those applied to the first degree.

3) A minimum of 2.00 Grade Point Average on all work attempted toward the second degree.

4) Students whose first degrees were from other institutions must also meet the UNCC residency requirements.

Entrance Deficiencies

Applicants who are otherwise well-qualified may be offered admission even though they are lacking the prescribed entrance units in foreign languages or mathematics.

Since the University offers no remedial courses in mathematics, that type of deficiency should be removed during the summer prior to the student's freshman year. The necessary courses are frequently offered in the summer programs of secondary schools, community colleges and technical institutes.

Students lacking units in a foreign language are expected to re nove that deficiency during the freshman year at the University.

All entrance deficiencies must be removed before registration for the third semester.

ADVANCED STANDING

A. *Advanced Placement Course Credit (AAP)*

Any student may apply for credit in subjects for which he has received a score of four or five on the Advanced Placement Test of the College Entrance Examination Board. A department may grant placement and/or credit for scores of three. The advanced placement privilege gives students a wider range of course selection and may reduce the amount of time required to earn a degree.

B. *College Level Examination Program (CLEP)*

The General Examinations
A student may receive up to 32 semester hours of credit equivalent

to the UNCC general degree requirements, with credit being awarded only for scores at the 50th percentile, or higher.

The Subject Matter Examinations
Credit may be awarded for subject matter examinations, except Medical Technology and Nursing, at the levels recommended in the current edition of *CLEP SCORES: Interpretation and Use.*

The amount of CLEP credit which is applicable to a specific degree program is determined by the respective departments.

C. *Transfer Credit from Other Institutions*

Transcripts are evaluated by examiners in the Office of Undergraduate Admissions and the results are provided to each applicant and to his major department. Determining the applicability of any transferred credits to major or program requirements is the responsibility of the department chairperson or program director. General rules governing transfer credit are:

1) No credit below *C* level will be accepted; quality points and averages do *not* transfer.

2) Courses in which credit is accepted must be appropriate for approved University programs and curricula.

3) A limited number of correspondence and/or extension courses may be transferred.

4) The University accepts a maximum of 64 semester hours from two-year institutions.

APPLICATION DATES

Due to the large number of applications the University is receiving and due to the rapid growth of this campus, the University may be required to announce an earlier cutoff date for application. Unless such an announcement is made, applications may be submitted and completed according to the following schedule:

Term of Entry	*Application Must Be Filed By*	*Application Must Be Completed By*
First Summer Term, 1976	May 1	May 15
Second Summer Term, 1976	June 15	July 1
Fall Semester, 1976	July 1	July 15
Spring Semester, 1976	December 1	December 15
First Summer Term, 1977	May 1	May 15
Second Summer Term, 1977	June 15	July 1

The University may alter these application dates in accordance with available resources and the enrollment limitation established by the North Carolina General Assembly.

DEGREES OFFERED

DEGREES OFFERED

The following degrees are offered at the University of North Carolina at Charlotte:

Bachelor of Arts (*B.A.*)

With Majors in:

Architecture
Biology
Business Administration
Chemistry
Earth Science
Economics
English
French
Geography
German
History
Mathematics
Philosophy
Physics
Political Science
Psychology
Religious Studies
Sociology
Spanish

Bachelor of Architecture (*B.Arch.*) (5-year program)

Bachelor of Science (*B.S.*)

With Majors in:

Accounting
Biology
Chemistry
Criminal Justice
Mathematics
Nursing
Physics

Bachelor of Creative Arts (*B.C.A.*)

With Options in:

Art Creative Writing Dance Music Theater

Bachelor of Science in Engineering (*B.S.E.*)

With Options in:

Engineering Analysis and Design
Engineering Science, Mechanics, and Materials
Urban and Environmental Engineering

Bachelor of Engineering Technology (*B.E.T.*)

With Options in:

Civil Electrical Mechanical

Master of Arts
Geography
Master of Arts in Education
Master of Education
Master of Management
Master of Science
Biology
Chemistry

DEGREES WITH DISTINCTION

Each of the undergraduate degrees except the B.C.A. (no grade point average computed) is awarded with high honor, when the graduate's quality point ratio is 3.80 or more, or with honor, when his quality point average is 3.40 or more but less than 3.80.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS

The degree of Bachelor of Arts is offered with majors in the following fields: architecture, biology, business administration, chemistry, earth science, economics, English, French, geography, German, history, mathematics, philosophy, physics, political science, psychology, religious studies, sociology and Spanish.

Course Requirements

The University of North Carolina at Charlotte has a minimum number of required courses to give the student maximum freedom in selection.

Following are the required courses:

Subject	*Semester Hours Required*
English	6
Option of Mathematics or Foreign Language***	6-8
Natural Science (One year of a laboratory science—biology, chemistry, Earth Science 101, 102, physics, or Psychology 101. Psychology 101 may be offered as a natural science or as a social science but not as both.)	8
Social Science (To be selected from economics, Geography 102, 201 or any 300 level geography course, history, philosophy, political science, psychology, religious studies or sociology.) A course in philosophy or religious studies may be offered as a humanity or as a social science but not as both.)	6
Humanities (To be selected from courses in literature, religious studies and philosophy. Courses in religious studies and philosophy may not fulfill both humanities and social sciences requirements.)	6
Total Number of Semester Hours Required for Graduation	120***

Note: For the number of hours in the major department, see the requirements of that department in the section entitled *Courses of Study.*

*A course in logic may be substituted for one course in mathematics. The rest of a student's course work is under the advisement of his department.

**Or proficiency in language equivalent to completion of the fourth semester. This is to be determined by the score on the Language Placement Test.

***The Bachelor of Arts in Architecture requires 132 hours. The Bachelor of Architecture requires 164 hours.

Quality Point Requirements

In all courses attempted at the University, a minimum overall quality point average of 2.00 is required.

Course Level Requirement

Junior and senior students are required to have the consent of their major department to enroll in any course below the 300 level not required in their degree program.

Residence Requirements

The minimum residence requirement for a Bachelor's Degree at the University of North Carolina at Charlotte is that a student must earn the last 30 semester hours of credit at the University. The last 12 semester hours of the work in his major field must be earned at the University. Exception to either of these hour provisions may be made upon the approval of the student's major department in consultation with the department offering the course or courses in question and with the approval of the dean of the college of the student's major.

Course work taken in residence shall be construed to mean work offered by the University of North Carolina at Charlotte and taken in course on the Charlotte campus.

REQUIREMENTS FOR THE BACHELOR OF CREATIVE ARTS DEGREE

To receive the Bachelor of Creative Arts degree, a student must have completed a minimum of eight semesters of work (or its equivalent) and meet the following stipulations:

1. The last two semesters must be completed in residence in the BCA program.

2. Upon consultation with his major adviser, a student forms a graduation review committee, consisting of: his major professor, one other professor in his field, two professors outside his field, and two students from his advisee group.

3. The candidate's portfolio, manuscript or performance must be appraised by his major professor and two other professors from outside the candidate's field.

4. The student must have a recommendation by a review board of three students from his field.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE

The degree of Bachelor of Science is offered with majors in the following fields of study: accounting, biology, chemistry, criminal

justice, mathematics, nursing and physics. The minimum requirements are the same as those for the degree of Bachelor of Arts listed on page 37.

FOREIGN LANGUAGE REQUIREMENTS

If a student elects the foreign language option, he is expected to achieve and demonstrate proficiency in a language other than English. Proficiency must at least equal that obtained by successful completion of 202-level language courses.

A student who presents four high school units in the same foreign language will be presumed to have satisfied the foreign language option of the general degree requirements even though he receives no University credit in that language.

The student who presents two units in a given language for entrance and who, by placement test, is found capable of enrolling in the 201 course in the same language, can satisfy the general degree requirement by successfully completing the 201 and 202 courses in that language.

The student who, on the basis of placement results, is advised to repeat the elementary course will receive credit for doing so. He may also choose to take an elementary course in another foreign language for elective credit.

A student provisionally admitted without foreign language units must take two elementary language courses for which he receives elective credit.

A student transferring to the University of North Carolina at Charlotte with two or more years of college work in an ancient or modern language not taught at the University, with a grade of at least *C* in each course, will be deemed to have fulfilled his foreign language requirement, provided he has completed satisfactorily two years of high school foreign language.

Students transferring from other colleges will take language placement tests in the language they intend to continue at the University, and they will be advised to register for the course for which they are best fitted, according to their placement test scores, for best results in their language sequence. They may not, however, receive credit again for courses the equivalent of which have already been accepted for transfer credit.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE IN ENGINEERING

The minimum residence requirement for a Bachelor of Science in Engineering Degree at the University of North Carolina at Charlotte

specifies that a student must earn the last 30 semester hours of credit at the University. The last 12 semester hours of the work in his major field must be earned at the University. Exception to either of these hour provisions may be made upon approval of the student's major department in consultation with the department offering the course or courses in question and with the approval of the dean of the College of Engineering.

Course work taken in residence shall be construed to mean course work offered by the University of North Carolina at Charlotte and taken on the Charlotte campus.

Course Requirements

English	3
Humanities and Social Studies Electives	15
Economics 201 or 202	3
Mathematics 105, 141, 142, 241, 271	15
Physics 101, 102, 222	11
Chemistry 101, 105	4
Science Elective	3
EGR 101A, B, C, 102A, B, C	6
ESM 241, 242, 311	9
Departmental Requirements*	42
Minor Option	15
Total Number of Semester Hours Required for Graduation	126

Quality Point Requirements

In all courses attempted at the University, a minimum overall quality point average of 2.00 is required.

In all courses attempted in the College of Engineering, a minimum quality point average of 2.00 is required.

Course Level Requirements

Junior and senior students must have the consent of the College of Engineering to enroll in any 100 or 200 courses not required in their degree program. The engineering electives, the humanities and social science electives, and the technical or humanities electives will ordinarily consist of sequences of related courses and are subject to the prior approval of the College.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ENGINEERING TECHNOLOGY

The residence requirement for the Bachelor of Engineering Technology degree at the University of North Carolina at Charlotte specifies

*See the departmental section of the catalog for these specific requirements.

that the last 30 semester hours of credit must be earned at UNCC and that the last 12 semester hours of work in the major field must be earned at this University.

Course Requirements

Prerequisite courses for entering the Engineering Technology program, normally taken at a technical institute or junior college, are listed on page 125.

In addition, the following UNCC courses are required for the B.E.T. degree:

Title	*Sem. Hours*
Chemistry 101 (or other Natural Science)	3*
Computer Science (CSC) 100	3
Economics 201 or 202	3
Humanities or Social Science electives	12*
Free electives	3
Major electives	6*
Engineering Analysis	6*
Specified courses in major area of study (see p. 126)	28*
Total	64
Transfer credit for A.A.S. degree	64
Total number of semester hours required for B.E.T. degree	128

Quality Point Requirements

In all courses attempted at the University, a minimum overall quality point average of 2.00 is required.

In all courses attempted in the College of Engineering, a minimum quality point average of 2.00 is required.

SECOND BACCALAUREATE DEGREE

Admission

A student earning his first baccalaureate degree at the University of North Carolina at Charlotte may continue his studies toward a second baccalaureate degree by filing an approved *Declaration of Program* at the Office of the Registrar UNLESS there is a lapse in enrollment between completion of the first degree and completion of the second degree.

Students holding baccalaureate degrees from other institutions, and other UNCC degree holders, must make application for admission to the

* Differences exist for CET curriculum.

second degree program by the admissions date published in the University calendar and be approved by the appropriate department chairman and college dean.

HONORS PROGRAM

The purpose of honors programs at the University of North Carolina at Charlotte shall be to identify the creative, imaginative, and/or exceptional student, and to encourage and recognize the development of this student's potential.

Honors work will emphasize independent study. Honors work may be undertaken as early as the first semester of the freshman year. To qualify for graduation with honors recognition, the student must be admitted formally to honors candidacy by the University Honors Council at least two semesters before graduation.

To qualify for graduation with honors recognition, the student must present a total of at least six hours of upper division honors work, undertaken during no fewer than two semesters, with grades of *Pass Honors* (*HH*). Three of these hours must be devoted to research leading to the production of an acceptable honors thesis or its equivalent. The student may withdraw from honors courses without penalty and may withdraw at any time from the honors program without penalty. Credit shall be given towards graduation for any completed honors courses.

Non-candidates for honors recognition shall be permitted to enroll in and receive credit for honors courses.

The grading system for honors courses shall be as follows:

Pass Honors (*HH*).	The student shall receive the quality points equivalent to the letter grade *A*, and hours so passed shall be averaged into the student's overall grade point average.
Pass (*HP*).	No honors credit or quality points shall be given, but the student shall receive course credits.
No Credit (*NC*).	No course or grade credit or penalty shall be given.

The credit system for honors courses shall be identical to that used for all other undergraduate courses.

BLACK STUDIES

Director: Frank Porter Graham Associate Professor Maxwell

The director facilitates the implementation of the program which will enable the University's Black students to come to an awareness of who they are, where they come from, where they are going and why.

Through a generous trust established by Miss Alice Tate of New York City, the University seeks to develop a variety of meaningful courses and cultural opportunities for its Black students.

PROGRAM FOR INTERNATIONAL STUDIES

Director: Earl L. Backman

The Program for International Studies, by offering a concentration, allows students to pursue an interdisciplinary and comparative study of foreign cultures and societies while they fulfill the academic requirements for a major in one of the approved University degree programs.

A concentration in international studies permits a wide variety of choice in subject matter and encourages course work in modern foreign languages, humanities, social sciences and international economics and business. Carefully selected programs should be designed to provide students with cultural and intellectual enrichment for more rewarding lives in an increasingly interdependent world. Such programs should also be of particular value to those with career objectives in government, business, trade, finance, law, health and environmental programs, international agencies such as the United Nations, private religious and humanitarian service organizations, journalism, teaching, research and military service.

Students seeking a concentration in international studies must fulfill general University degree requirements and requirements for a selected major. In addition, students are expected to complete a minimum of eight courses in at least three departments outside their major. Courses approved for an international studies concentration are listed below.

A program of study fulfilling this option may be viewed from a variety of perspectives: topically, e.g. world population, poverty, violence, and war and peace futures; or geographically, e.g. Soviet Union, Eastern Europe, Africa, Asia and Latin America; or chronologically, e.g. ancient, medieval and modern. Students majoring in the following disciplines may earn a concentration in international studies:

Accounting
Architecture
Biology
Business Administration
Chemistry
Earth Science
Economics
Engineering Analysis and Design
Engineering Science, Mechanics and Materials
Engineering Technology
English
French
Geography
German
History
Law Enforcement and Administration
Mathematics
Nursing
Philosophy
Physics
Political Science
Psychology
Religious Studies
Sociology
Spanish
Urban and Environmental Engineering

Creative ideas and leadership for the academic program are provided by the director and the International Studies Advisory Committee of faculty, students and staff representing the various cooperating departments. The International Studies Program also coordinates a variety of activities, events and travel options and other opportunities of international scope in order that students may participate in a broad range of experiences.

Students seeking certification in international studies shall plan programs with department advisers and the director of International Studies. The director will assist in the planning of a concentration, and reveiw and approve all certification in International Studies. Transcripts of students satisfactorily completing their program will bear the statement, "Concentration in International Studies." To meet the requirements for the concentration, a student also must have at least a 2.0 average in the courses offered for it.

Lists of courses approved for credit toward a concentration in International Studies are available in the departments listed above or from the program director.

PREPARATION FOR PROFESSIONAL SCHOOLS

Students may begin preparation at the University of North Carolina at Charlotte for a number of professional careers. Depending upon the professional school's requirements, the student may wish to take a degree at the University of North Carolina at Charlotte or to transfer after one, two or three years.

Preparation for the following programs is offered: Dentistry, Journalism, Law, Medical Technology, Medicine, Optometry, Pharmacy and Social Work.

The student who plans to enter a professional school is advised to plan his program so that general requirements for the Bachelor of Arts or Bachelor of Science degree are met in addition to the requirements for the professional program being considered. The student planning to attend a professional school should inform his adviser of his plans. The student should become familiar with the requirements of the school which he plans to attend.

Dentistry and Medicine

The composite requirements for entrance to most medical and dental schools in North Carolina, South Carolina, Georgia, Tennessee and Virginia are as follows:

Biology ..... 8 hours
Inorganic Chemistry ..... 8 hours
Organic Chemistry ..... 8 hours
Quantitative Analysis ..... 4 hours
(*Required by half the schools surveyed*)
Physics ..... 8 hours
English ..... 12 hours
Foreign Language ..... 9-12 hours
(*North and South Carolina only*)

Journalism

A number of institutions accept graduate students in journalism with the background of a liberal arts degree. Other institutions accept students transferring to an undergraduate program at the junior year with a liberal arts background.

Law

The University suggests that the student planning to enter law school have an understanding of the value of English literature and composition, American history, psychology, logic and ethics, political sciences, economics, government, accounting, mathematics, sociology, Latin and modern languages. Preparation should include comprehension and expression in words, critical understanding of human institutions and values, and creative power in thinking. Thus, any of several majors with wisely selected electives might provide the broad educational background needed.

Medical Technology

The University, through affiliation with several schools of medical technology, offers programs leading to baccalaureate degrees in biology and chemistry, with training in medical technology. Students interested in this four-year program are advised to check the more detailed listing under the individual departments and to consult with the appropriate adviser in the Department of Biology or Chemistry.

Optometry

Schools of optometry require a minimum of two years undergraduate study similar to the two-year program listed for pharmacy below. Advising for students interested in pre-optometry preparation is available in the Department of Physics.

Pharmacy

Students planning to seek a Bachelor of Science in Pharmacy degree may spend either one or two years at the University of North Carolina at Charlotte before transferring to the University of North Carolina at Chapel Hill, where a total of five years, including those undertaken on the Charlotte campus, is required for the degree.

For the student planning to spend one year at the University of North Carolina at Charlotte, the following courses are required:

English 101, 102
Social Science (2 semesters)
Biology 101, 205, 205A; or 221, 345
Mathematics 101, 120
Chemistry 101, 102
Physical Education (2 semesters)

For the student planning to spend two years on the Charlotte campus, the following additional courses are required:

Humanities (1 semester)
Economics 201
Physics 101, 102
Chemistry 231, 232
Electives (6 hours)

Social Work

For the student planning a career in social work, a major either in psychology with related work in sociology or a major in sociology with related work in psychology is recommended. Whichever major is chosen, the following courses should be included: Psychology 303 (Social Psychology), Psychology 305 (Psychology of Personality), Psychology 307 (Abnormal Psychology), Sociology 271 (Social Problems), Sociology 372 (Sociology of Deviant Behavior); Sociology 380 (Field of Social Work) and Sociology 481 (Methods of Social Work).

GRADUATE STUDIES

Master's Degree Programs

The University of North Carolina at Charlotte currently offers six graduate degree programs. Of these, two, the Master of Arts in Education and the Master of Education, are directed primarily to in-service public school teachers in the surrounding area. A third, the Master of Management, is designed to meet the needs of persons currently employed by business, financial or manufacturing institutions within commuting distance of our campus. The Master of Arts in Geography seeks to prepare professionals in planning, locational analysis, teaching and similar areas of interest. The Master of Science in Biology and in Chemistry is awarded on the basis of research programs emphasizing breadth of training in the respective field.

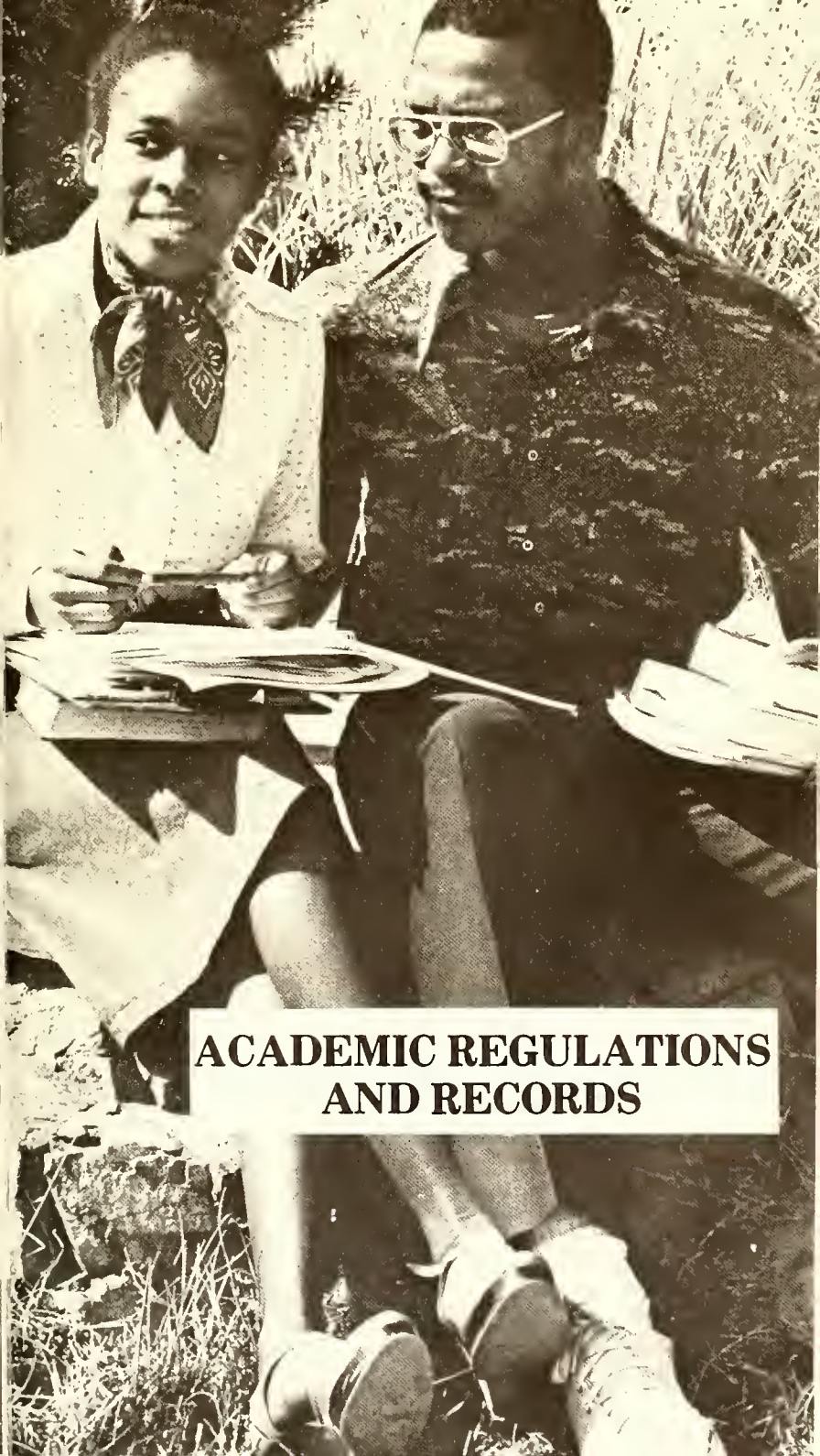
Admissions

For admission to graduate study at UNCC, application must be made on a form supplied by the director of Graduate Studies and accompanied by the specified application fee, scores on the Aptitude Portion of the Graduate Record Examination or the Miller Analogies Test (for all programs except the Master of Management); three recommendations, an essay describing previous experience and objective in undertaking graduate study, and two official transcripts of all academic work attempted beyond the high shcool. Scores on the Admission Test for Graduate Study in Business are required with the application for the Master of Management program. Applicants for the Master of Science programs may be admitted on the basis of the Aptitude Portion of the GRE or Miller Analogies Test, but will be required to take the Advanced Graduate Record Examination in field during their first semester in residence. In general, an applicant is expected to have an overall quality point average of 2.5 (on a 4.0 scale) on all work attempted beyond the high school, with an average of 3.0 or better on the major or basic

courses prerequisite to the area of proposed graduate study. Applicants for admission to programs leading to the M.A.Ed. or M.Ed. will normally possess a valid North Carolina Class "A" teacher's certificate or be approved in advance.

The minimum number of semester hours required varies from 30 to 36, depending on the degree sought. Additional course work may be required in any program to remedy deficiencies in preparation or to meet specific professional objectives. At least half of the work offered for the degree must be selected from courses open only to graduate students; the other half may be taken from courses open to advanced undergraduates or graduates.

For detailed information concerning the admissions and degree requirements specific to each program consult the current *Graduate Catalog* or contact the director of Graduate Studies.



ACADEMIC REGULATIONS AND RECORDS

*Grading – Undergraduate**

The unit of measurement of University work is the semester hour. It ordinarily represents one lecture hour per week for one semester; however, a sequence of two or three laboratory hours is considered to be the equivalent of one lecture hour.

Letters are used to indicate the quality of work done. Each letter carries a quality point value for each semester hour of work attempted. The meaning of each letter with its accompanying quality point factor is:

Letter	*Description*	*Quality Points Per Semester Hour*
A	Excellent	4
B	Good	3
C	Fair	2
D	Passing	1
F	Failing	0
I	Incomplete	**
W	Withdrawal	**
AU	Audit	**
	Pass/No Credit	
H	Honors	**
P	Passing	**
N	No Credit	**
	Honors	
HH	High Honors	4
HP	Honors Passing	**
N	No Credit	**
	Creative Arts (*No grade point average is computed.*)	
P	Progressing	
S	Satisfactory	
U	Unsatisfactory	

Grade of I

The Grade of *I* is assigned at the discretion of the instructor when a student who is otherwise passing has not completed all the work in the course. The missing work must be completed during the next semester in residence or within one calendar year after the end of the term in

*For explanation of grading in the Bachelor of Creative Arts degree program, see page 165. For explanation of grading in the college of engineering, see page 100.

**Not used in the computation of gradepoint averages.

which the *I* was assigned, *whichever comes first.* If the *I* is not removed during the specified time, a grade of *F* is automatically assigned.

*Grade of W**

No grade will be given for a course dropped on or before the last day to drop courses without grade evaluation. When a student withdraws from a course after that date, as indicated on the Academic Calendar, but before the end of a semester, and if in the opinion of his instructor he is passing at the time of withdrawal, he will receive the grade of *W*. Courses given the grade of *W* do not count as hours attempted. The time of withdrawal is the time the drop card is accepted by the Registrar's Office.

Quality Point Ratio

A student's quality point ratio at the University of North Carolina at Charlotte is determined by multiplying the number of quality points for each grade by the number of hours received in that course and adding all accumulated quality points together, then dividing by the total number of hours the student has attempted, except those for which the student has received a grade of *W*, *I*, or *U*. In computing the quality point ratio, only those credits attempted at the campus of the University of North Carolina at Charlotte are included.

The quality point ratio for students enrolled in the College of Engineering is calculated somewhat differently. When a course is repeated, no additional hours attempted accrue, and the quality points of the previous grade are replaced by those of the current grade.

Grading—Graduate

A different grading system is employed in reporting performance in graduate studies. The system of grades which is authorized for graduate credit enrollment is published in the *Graduate Catalog.*

Grade Reports

A report of final grades is mailed to each student at the close of each term unless a student requests, in writing, that his copy be mailed directly to a parent or guardian.

Parents and students are urged to confer with one another and arrive at a mutual understanding of the person and address to whom the grade reports are to be sent.

Special reports of unsatisfactory achievement are sent to the students concerned near the middle of each regular semester.

* College of Engineering regulations differ.

Transcripts of Records

Upon written request by the student, an official transcript of his academic record will be issued to the person or institution designated, provided that all the student's obligations to the University have been settled satisfactorily.

Each student is entitled to one transcript without cost, regardless of how early in his academic career the request may be made. A fee of $1 per copy should accompany subsequent requests.

Requests should reach the Registrar's Office at least one week before the date the transcript is needed.

Registration For Credit

Registration in any course is limited to the first week of a semester and the first three days of classes of a summer term. No credit will be given to a student for a course unless he is properly registered for it.

Assignment of Academic Advisers

Each student entering the University of North Carolina at Charlotte is assigned an adviser. Usually the adviser will be in the major field chosen by the student. Advisers are also supplied for those students who have not chosen a major field.

Changing of Degree and Major

A student may change from one degree or one major to another with the approval of the chairman of the department of his new major.

Course Load

A load of 15 semester hours constitutes a normal full semester program, but a student may register for less work. Any undergraduate student carrying 12 or more semester hours will be considered a full-time student by the University. A full load for graduate students consists of nine semester hours.

Course load is dependent on two factors: the scholastic ability of the student as reflected by his scholastic record, and available study time. It is suggested that a student whose part-time employment totals 20 hours a week should not carry more than 10 semester hours. A student working 40 hours a week should not carry more than seven semester hours.

*Adding or Dropping a Course**

In order to add or drop a course after the registration period, a student must secure written permission from his adviser and complete the necessary procedure as prescribed by the Registrar's Office. No student will be permitted to add a course or change sections of a course

* College of Engineering regulations differ.

after the first week of a semester or the first three days of classes in a summer term.

A student who withdraws from a course after the last day to drop courses without grade evaluation will receive a grade of *W* if, in the opinion of his instructor, he is passing at the time of withdrawal, and will receive a grade of *F* if, in the opinion of his instructor, the student is failing the course at the time of withdrawal.

Withdrawal

Any student voluntarily leaving the University before the close of the term must withdraw officially. He initiates the withdrawal procedure at his major department. A student who is unable to appear in person may notify the Registrar's Office of his withdrawal by a letter.

Any person who leaves the University before the close of a term without withdrawing officially will receive a grade of *F* in all courses for which he is registered.

Transient Study

Course work undertaken by UNCC students at other accredited institutions may be transferred to the University, subject to the following regulations:

1. The University is not obligated to accept any credit from another institution unless the student has obtained the prior approval of the dean of the college in which he is enrolled. A Permit for Transient Study form should be completed and filed in the Registrar's Office.

2. No credit below *C* level will be accepted; no quality points transfer.

3. A limited number of correspondence and/or extension courses may be transferred.

Credit By Examination

A student currently enrolled at UNCC may pass a specially prepared examination and receive credit for a University course without having to do the normal course work. The examination will be designated by the appropriate department and will be administered either by the department or the Counseling Center. Credit by examination will carry no quality points, and failures on such an examination will incur no quality-point penalty. A department may allow a student to take examinations for courses not then offered on the Charlotte campus, if it deems it appropriate to do so.

Challenge examinations in nursing courses are open to any student who is currently enrolled in the College of Nursing and who has had previous formal instruction in the subject area content for which he wishes to challenge for credit. Equivalency credit for nursing courses will be determined on the basis of written validation examinations in each clinical nursing course, and the applicant will be given credit only

for those courses in which he attains a grade of C or better on the challenge examination. No challenge examination may be repeated. If an attempt at challenge is unsuccessful, the student will be required to enroll in the course for both theory and clinical laboratory experience. *No student may challenge a course for which he has already received a passing or failing grade at UNCC.*

Pass-No Credit Option

Every student will be permitted during his four undergraduate years to select a total of four courses in which he shall receive an evaluation of *H*(*honors*), *P*(*pass*) or *NC* (*no credit*). Only one such course will be selected during an academic year. Every course in the University is offered on this basis except when taken by a student for departmental credit toward his major or to satisfy all University degree requirements. Although units completed with *honors* or *pass* will count toward graduation, they will not be reckoned as part of the grade-point average.

This option is designed to encourage curiosity, exploration and experimentation in areas where a student has strong interests but little or no previous experience.

The student must declare his intention to take a Pass-No Credit option by the end of the add period in the semester.

Attendance

The instructional work of the University is designed for class attendance, and it is assumed that students will be present. Students who miss classes will be responsible for the work of those periods. A missed test may cost the student the advantage of a grade to be counted toward the final estimate since instructors are not required to give make-up tests.

No student may expect full credit unless he has attended at least 75 percent of the total class hours.

Classification of Students

At the beginning of the fall semester regular, students working toward a bachelor's degree are classified on the basis of minimum earned semester hours as follows:

Classification	*Earned Semester Hours*
Freshman	1-23
Sophomore	24-51
Junior	52-89
Senior	90 or more

Requirements for Continued Enrollment

As a general rule, each student will be allowed to remain at the University of North Carolina at Charlotte for the first two semesters following his first enrollment or until 30 semester hours have been attempted at the University of North Carolina at Charlotte, whichever happens last.

As a general rule, the summer sessions at the University of North Carolina at Charlotte shall be open to all students previously enrolled, including students academically ineligible to continue during the regular academic year.

The following table will serve as a guide to help the student determine his eligibility to continue.

Hours of Credit Earned, Including Transfer Credit:	*Minimum Grade Point Average to Continue*
0-29	1.10
30-59	1.30
60-89	1.60
90-109	1.90
110-and over	1.90

After the student has earned 60 semester hours, he is expected to make at least a 2.0 quality point ratio for each semester.

No student will be suspended from the University of North Carolina at Charlotte at the end of any semester for which his quality point ratio is at least 2.20.

A student's quality point ratio is determined on the basis of the hours he has attempted at the University of North Carolina at Charlotte. However, the grade of *F* on the same course will not count against the student more than once.

Requirements for Progression in Nursing Program

In order to promote the progression of safe practitioners from one level to the next within the College of Nursing and eventually into the nursing profession, students:

1. must achieve a minimum grade of *C in each nursing course.*

    a. A grade of *C* or better is required in both theory and laboratory experience in each nursing course. The final grade will be recorded as a combined grade.

    b. Only one *D* in a natural science is acceptable for credit by the College of Nursing.

2. may not repeat a nursing course more than once. If a student repeats a nursing course and does not achieve a minimum of *C*, she will be asked to withdraw from the College of Nursing.

3. may not progress to the next level in the nursing curriculum until the prerequisite nursing courses have been completed.

4. may not attempt junior level nursing courses until Biology 101, 203, 205 and Chemistry 103 and 104 and sophomore level nursing courses have been completed.

5. may not attempt senior level nursing courses until all junior level nursing courses have been completed.

6. must meet the earned hour and cumulative QPR requirements for continuance as stated in the *Catalog* of UNCC.

Academic Regulations for College of Engineering Majors

The academic regulations governing quality point ratio for majors in the College of Engineering are different. Refer to pages 100 and 101 for these regulations.

Requirements for Removal of Academic Suspension

No student under suspension will be readmitted to the University if he does not completely satisfy the entrance requirements as stated elsewhere in this *Catalog.*

In addition, a student who has been suspended by reason of failure to satisfy the requirements for continued enrollment as stated above will be ineligible for readmission until the expiration of the next semester following his suspension (except that he will be permitted to enroll in the Summer Session) or until he meets the requirements for continued enrollment. If readmitted, he will be expected to satisfy the requirements for continued enrollment.

At the end of the semester in which the student fails to meet the requirements for continued enrollment for the second time, he will be suspended and may be readmitted only after meeting the requirements for continued enrollment.

The student has recourse for meeting the requirements for readmission by attending summer sessions at UNCC.

If a student attends another institution after suspension from the University of North Carolina at Charlotte, he may be readmitted, provided that he presents a minimum of 24 credit hours of acceptable work from that institution. In this case, he will be accepted as a transfer student and must satisfy the requirements for continued enrollment. (See page 55.)

NOTE: Readmission after suspension or after an incomplete semester, whether caused by withdrawal or suspension, is not automatic. A new application must be made and approval to return must be received. Included in the approval must be an acceptance from the department in which the student would carry his major. See page 32 (*Admission of Former Students.*)

Application for the Degree

Each student should make application for his degree on a form obtained from the Registrar's Office no later than the filing date specified in the University calendar. The application must be accompanied by the appropriate filing fee in effect at the time of the application. Degrees are awarded at Commencement exercises held at the end of the spring semester; however, the diploma will reflect the term in which all requirements were completed.

Student Responsibility

Every student is responsible for the proper completion of his academic program, for familiarity with the University *Catalog*, for maintaining the grade average required, and for meeting all other degree requirements, including attendance at the commencement exercises at which he will receive his diploma. His adviser will counsel him, but the final responsibility remains that of the student.

A student is required to have knowledge of and observe all regulations pertaining to campus life and student deportment. He is responsible for maintaining communication with the University, by keeping on file with the Registrar's Office at all times his current address, including ZIP Code, and telephone number.

Every student, while he is associate with the University, is expected to comport himself in campus and community life in a manner that will reflect credit upon himself and the University.

FINANCIAL INFORMATION

University Statement on Residency Status for Tuition Purposes

Quotation verbatim of the current North Carolina law on this subject:

G.S. 116-143 .1(b)
"To qualify for in-state tuition a legal resident must have maintained his domicile in North Carolina for at least the 12 months immediately prior to his classification as a resident for tuition purposes. In order to be eligible for such classification, the individual must establish that his or her presence in the State during such twelve-month period was for purposes of maintaining a bona fide domicile rather than for purposes of mere temporary residence incident to enrollment in an institution of higher education; further, (1) if the parents (or court-appointed legal guardian) of the individual seeking resident classification are (is) bona fide domiciliaries of this State, this fact shall be prima facie evidence of domiciliary status of the individual applicant and (2) if such parents or guardian are not bona fide domiciliaries of this State, this fact shall be prima facie evidence of non-domiciliary status of the individual."

University regulations governing residential classification of students are set forth in detail in "A Manual To Assist the Public Higher Education Institutions of North Carolina in the Matter of Student Residence Classification for Tuition Purposes." Each enrolled student is responsible for knowing the contents of this manual. Copies of the manual are available in the Registrar's, Graduate Studies and Admissions Offices for inspection upon request.

Tuition and fees

Charges for tuition and fees vary according to the student's status as a resident or nonresident of North Carolina. A nonresident student must pay a higher rate of tuition than a legal resident.

Tuition and fees are due and payable on the day of registration. Checks and money orders should be made payable to the University of North Carolina at Charlotte.

Students taking eight or more semester hours of work during a regular semester will be charged full tuition and fees. Students taking fewer than eight hours of work during a regular semester will be charged a prorated portion of tuition and fees as specified below. The charges which follow reflect the tuition and fees for the 1976-77 academic year.

Cost Per Semester For Eight or More Semester Hours	**Commuting Students*	*No. Carolina Resident Students*	*Out-of-State Resident Students*
Tuition	$120.00	$120.00	$ 950.00
General Fee	111.00	111.00	111.00
**Room and Board		512.50	512.50
Total	$231.00	$743.50	$1,573.50

Cost Per Semester For Five to Seven Semester Hours	**No. Carolina Students*	*Out-of-State Students*
Tuition	$ 62.50	$ 478.00
General Fee	40.50	40.50
Total	$103.00	$ 518.50

Cost Per Semester For Four or Fewer Semester Hours	**No. Carolina Students*	*Out-of-State Students*
Tuition	$ 31.50	$ 239.50
General Fee	17.00	17.00
Total	$ 48.50	$ 256.50

NOTE: Residence hall space is not available to students taking fewer than 12 semester hours.
All new full-time UNCC students (freshman or transfers) will be required to pay a one-time $7 orientation fee.

Additional Expenses

No extra fees are charged for laboratories as such. However, all degree students in the Creative Arts program are charged a flat fee of $45 per semester. All students enrolled in Directed Projects in the Department of Creative Arts are charged $25 per semester.

The estimated average cost of books and supplies per semester is $65. Beginning students in architecture and engineering should allow an additional expense of $60-$75 for drawing instruments, slide rule and supplies. Uniforms and supplies for nurses will cost approximately $100.

In addition to the above, the student should take into consideration the costs of clothing, snacks, recreation, laundry, etc. in planning his expenses for each semester.

* The commuting student will not have the cost of room and board but should estimate his cost of travel to and from the campus. Out-of-state commuting students should use the cost of tuition listed in the third column in computing their total expenses each semester.

** The listing for room and board given above is for the seven day plan. In addition, the University offers a five day room and board plan available at a cost of $487.50.

The University reserves the right to make, with the approval of proper authorities, changes in tuition and fees at any time.

Housing

Admission to UNCC does not guarantee residence hall space. Arrangements for on-campus housing are made after admission with the Director of Residence Life. See the Correspondence Directory on the inside front cover for the proper address.

All housing applications for the full academic year must be submitted with a $50 pre-payment. This pre-payment is applied to spring semester room and board charges unless the student cancels his application for the spring semester by December 10, in which case, the $50 will be refunded. No refunds for fall semester reservations are made after July 1.

Application Fee

Applicants for admission are required to submit a $10 application fee with the application form. The fee is not deductible and is not refundable.

Late Registration Fee

A fee of $10 will be charged for those registering after the designated registration period each semester. *The fee is not refundable.*

Applicants completing their applications before the initial registration day but whose applications could not be processed in time will not be assessed the late registration fee if required to register late.

Graduation Fee

Each member of the graduating class must pay a graduation fee of $15 at the time he applies for the degree. This fee includes the cost of the diploma and the rental of the cap and gown. No reduction of the fee is allowed for those receiving degrees *in absentia.* For graduate students, the cost of renting a hood is in addition to the $15 charge.

Registration of Motor Vehicles

Any student attending the University is required to register his motor vehicle(s) in order to park such vehicle(s) on campus. Only vehicles owned by the student, his spouse, his parent(s), or his guardian may be registered. Unless increased by the chancellor, the number of vehicles which a student may register is two.

Registration of motor vehicles is to be accomplished as part of the University registration at the beginning of the fall semester of each year or at the time when the student first registers in the University and at the beginning of the fall semester of each year thereafter. A motor vehicle acquired by a student during a semester is to be registered.

The motor vehicle registration fee for students, faculty and staff members is as follows:

$20 per academic year beginning with the fall semester;

$12 for the period beginning with the spring semester and ending with the beginning of the next fall semester;

$ 8 for the period beginning with a summer term and ending with the beginning of the next fall semester;

$ 2 for one additional motor vehicle;

$ 1 for replacing lost or defaced permit.

Violators of University Parking Regulations will incur a civil penalty of $1.00, $3.00 or $5.00, depending on the seriousness of the violation. If not paid in five days, the penalty will be doubled and applied to the member's account with the University and collectable as a bad debt. Subsequent registration may be withheld for nonpayment.

Credit By Examination Fee

Fees for credit by examination are as follows: A written examination for a course will require a fee of $15. A laboratory examination requiring the arrangement of such things as laboratory materials will require a fee of $25. A combination of a laboratory and written examination will require a fee of $30.

Student Activities Fee

A part of the general fee provides students with a program of cultural, recreational and entertainment activities. It pays for admission to most athletic contests, dramatic productions, activities sponsored by the University Program Board, social and entertainment functions, and for subscriptions to the campus newspaper and literary magazine. The yearbook is provided free to all students taking eight or more semester hours of work each semester during the academic year. Other students may obtain a yearbook upon payment of $8.50.

Refunds

A student who officially withdraws from the University during the first two weeks of the semester will receive a refund of the full amount paid less a fee of $25.00. This applies to both full and part-time students. No requests will be approved after the end of the normal refund period unless the student can show undue hardship which caused him to withdraw from the University.

In the event a refund is approved as a result of hardship, the refund will be made pro-rata, based on the number of weeks between the beginning of the semester and the date the student officially withdrew from the University. Requests for a refund must be submitted in writing to the Chairman of the Refunds Committee.

In each summer session, a student who officially withdraws from the University during the first three class days will receive a refund of the full amount paid less a registration fee of $10. Under normal circumstances no refund will be made after the first three days of the summer session unless the student can show undue hardship which caused him to withdraw from the University.

Housing Refunds

The rental period is for the entire academic year (Fall and Spring semesters) continuing until the end of the Spring semester regardless of occupancy date after the Fall semester begins. Students may terminate at the end of the Fall semester with no penalty only by written notification to the Residence Life Office by December 10. The housing and dining agreement binds the student and/or guarantor to the full amount of charges for the academic year except as noted below:

a) Prior to July 1 for the Fall semester and December 10 for the Spring semester, an agreement can be cancelled and full refunds made upon written notification to the Residence Life Office. If a student cancels after these dates, and up until the day prior to the published opening date of the residence halls for the appropriate semester, he/she will forfeit the $50 prepayment.

b) If cancellation is completed between the day prior to this published opening date of the residence halls and the end of the second week of classes for the semester, and another student contracts for that space, the student will be charged $50 in addition to forfeiture of the $50 housing prepayment. Also, dining charges will be made on a weekly pro-rata basis.

c) If cancellation is completed after the first two weeks of classes for the semester and another student contracts for that space, the student will be charged $50 for housing, in addition to forfeiture of the $50 housing prepayment, plus pro-rata share of housing and dining based upon a weekly amount up through week of cancellation or check-out.

d) If a student cancels on or after the day prior to the published opening date of the residence halls and *no other student contracts for that space*, he/she will be held responsible for the full semester's debt service charges for housing and dining ($100) plus forfeiture of $50 prepayment and any weekly pro-rata charges for housing and dining up through the week of cancellation or check-out.

Education For The Vocationally Handicapped

Students who have suffered a disability which renders them vocationally handicapped are eligible for aid provided by the North Carolina State Division of Vocational Rehabilitation. This aid takes the form of services which include vocational counseling and guidance and

placement. Payment of expenses such as training, medical treatment, room and board, books, fees and tuition may be available. A vocational rehabilitation officer is available in Charlotte for interviewing applicants. Appointments may be made by contacting the Vocational Rehabilitation Office located at 219 East Boulevard, 375-8686.

Veterans Benefits

The Office of the Registrar works with the Veterans Administration to assist in administering the various programs of benefit to veterans or eligible relatives of veterans. The veterans clerk in the Registrar's Office certifies enrollment and transmits necessary credentials and information to the proper Veterans Administrative Office.

Admission to the University should be obtained before the student makes application for veteran's benefits. Application for a Certificate of Eligibility should be made to the nearest Veterans Administration Regional Office at least six weeks before the expected date of enrollment.

In order to be eligible for the full monthly allowance under any of the above laws, an undergraduate student must be enrolled for 12 or more semester hours of work, while a graduate student must be enrolled for nine or more semester hours. Those enrolled for fewer semester hours than the limits stated above will be eligible for part-time compensation. Students are responsible for reporting any change in enrollment status to the veterans clerk in the Office of the Registrar.

Children of Veterans

The North Carolina Department of Veterans Affairs awards scholarships for the children of certain deceased or disabled veterans. Those awarded "full" scholarships are entitled to tuition, mandatory fees, board allowance and room allowance; those awarded "limited" scholarships are entitled to tuition and mandatory fees. All inquiries should be referred to the North Carolina Department of Veteran Affairs, P.O. Box 26206, Raleigh, North Carolina 27611, telephone, Raleigh 829-3851.

Before the time of registration each eligible student who wishes to enter the University should:

1. Make application for admission following University procedures.

2. Make application for scholarship award to the North Carolina Department of Veterans Affairs.

Financial Aid

Financial assistance is available to University undergraduate students in several forms: scholarships, grants-in-aid, loans and part-time employment. The University makes every effort within the limits of its available resources to encourage and assist students with seriousness of purpose to obtain a University education. A financial problem should not deter a student from submitting an application for admission.

How to Apply

To be considered for financial aid at the University of North Carolina at Charlotte, a student must have on file a University application for financial aid, the Parents' Confidential Statement from College Scholarship Service, and be accepted for admission to the University. The University application for financial aid may be obtained from the Student Aid Office. The PCS is available through the guidance counselors of all high schools or from the Student Aid Office of the University. The University of North Carolina at Charlotte participates in the College Scholarship Service of the College Entrance Examination Board. Together with other participants in CSS, the University subscribes to the principle that the amount of financial aid granted a student should be based upon financial need. The CSS assists colleges and universities and other agencies in determining the student's need for financial assistance. All students seeking financial assistance are required to submit a copy of the Parent's Confidential Statement form to the College Scholarship Service, designating the University of North Carolina at Charlotte as one of the recipients. The institutional application and the PCS should be submitted prior to April 1 in order to assure that they can be processed in time for an award to be made before fall registration. Any student submitting the required forms will be automatically considered for all types of financial aid which are available through the University.

The University seeks to assign the kind of aid best suited to the needs and qualifications of the student. In general, the awards are approved and announced proportionate to the demonstrated need of the student and his satisfactory record of achievement and school citizenship. All students will be given consideration regardless of race, creed, color or national origin.

Renewal of Financial Aid

Renewal of financial aid is based upon a student's making a clearly satisfactory record. After enrollment, the student must make application by April 1 for financial aid in the next year. The PCS will be required each year that a student applies for financial aid.

Loans

The Emergency Loan Fund—Students may borrow up to $25 for 30 days. There is a $.25 service charge, but no interest is charged on the loan. Students may borrow up to $100 for 60 days at an interest rate of three percent per annum. The student who consistently borrows from this program will be expected to file an application for financial aid. Normally, tuition and fees are not considered an emergency.

The Marlin McCasland Memorial Emergency Loan Fund—This fund, established by friends of Marlin McCasland as a memorial, is for the purpose of making emergency loans up to $25 for 30 days. There is a $.25 service charge, but no interest is charged on the loan.

The Student Financial Services—This office, financed and operated by the Student Body Government, offers short-term loans and check cashing privileges.

Federal Insured Low Interest Loans—Qualified applicants may borrow up to $2,500 per year for educational expenses. The interest rate throughout the life of the loan is seven per cent per annum, simple interest. Borrowers whose adjusted family income is less than $15,000 are eligible for payment of the seven percent interest by the federal government during the in-school, grace and authorized extension periods. Repayment begins on a date between nine and 12 months after a student completes his course of study or leaves school. The maximum repayment period is 10 years, although minimum repayment requirements may reduce this. Deferment of repayment may be authorized for service in the military, Peace Corps or VISTA or for any period that a student returns to full-time study.

The Prospective Teachers Scholarship Loan Fund provides funds for prospective teachers each year. The loans are made in the amount of not more than $900. The fund is administered by the State Superintendent of Public Instruction, Raleigh, North Carolina. All scholarship loans are evidenced by notes which bear interest at the rate of four percent per annum from September 1 following fulfillment by a prospective teacher of the requirements for a teacher's certificate based upon the bachelor's degree. Scholarship loans, together with four per cent thereon, may be cancelled by teaching one full year in North Carolina for each annual scholarship received. Consideration for a scholarship loan is given on the basis of the aptitude, purposefulness, scholarship, character and financial need of the applicant. For detailed information about the program, write to Prospective Teachers Scholarship Loan Fund, State Department of Public Instruction, Raleigh, North Carolina.

Basic Educational Opportunity Grant (BEOG)

The Education Amendments of 1972 authorized a program of financial aid known as the Basic Educational Opportunity Grant. It is expected to provide awards to students of up to $1,400 for each undergraduate year. However, the grant cannot exceed the need of the student nor can it be for more than 50 per cent of the actual costs of attendance at the institution the student has chosen. Therefore, full entitlement at the University of North Carolina at Charlotte may be somewhat less than the prescribed $1,400.

Applications are available on request from the Financial Aid Office.

Every student who enrolled after April 1, 1973 should apply for BEOG to test eligibility for this entitlement program.

Scholarships

The Bonnie E. Cone Merit Scholarship is awarded annually to students having high moral character and proven scholastic attainment whose further education at the University will, in the judgment of the

scholarship committee, enhance the citizenship of the recipient and advance the service of the University of North Carolina at Charlotte as an institution of excellence.

Following is a list of additional scholarships and the names of individuals, corporations and foundations which provide scholarships:

Alcoa Foundation
Alpha Chapter of Alpha Delta Kappa
Alpha Sigma Chapter of Delta Kappa Gamma
Altrusa Club of Charlotte
American Business Women—Carolina Heritage Chapter
American Business Women—Carolina Charter Chapter
American Business Women—Mecklenburg Chapter
American Business Women—Queen Charlotte Chapter
American Institute of Certified Public Accountants—Charlotte Chapter
American Society of Heating, Refrigerating and Engineers Scholarship
American Society for Metals
American Society for Quality Control
Paul Anthony Memorial Scholarship
AREME Shrine No. 3
J. Murrey Atkins Scholarship
Brycie Baber Scholarship
Barnhardt Manufacturing Company
Tom Black Memorial
Blair-Boone Scholarship Fund
Cannon Scholarship for Nursing
Carolina Yarn Association
Carolina Paper Board
Charlotte Association of Insurance Women
Charlotte Board of Realtors
Charlotte Business and Professional Women
Charlotte Civitan Club
Charlotte-Meckleburg—NCEA
Charlotte Panhellenic Congress
The Charlotte Women's Auxiliary of the N.C. Pharmaceutical Association
Charlotte Woman's Club
Bonnie E. Cone Scholarship
Corporate Insurers
Jim Crockett Memorial
Sanford V. Davenport Scholarship
W. Cleveland Davis Scholarship
Charles C. Dudley Scholarship
Ernst & Ernst Achievement Scholarship
Exeutives' Secretaries, Inc.
Otto L. Giersch Scholarship
Harry P. Harding Scholarship
Bronna Watson Hackney Senior Nursing Honors Scholarship
Harrison-Wright Scholarship
Haskins & Sells Scholarship
David Henderson Memorial
Housewares Club of the Carolinas
Hynes Sales Company

Jefferson Standard Foundation Scholarship
Jeld-Wen-Wenco Scholarship
Kerley Scholarship for Nursing
Kokenes Award
Lincoln/Jewell, Inc. Insurace Scholarship Fund
McEwen Scholarship
Enloe McLain Scholarship
Pierre Macy Scholarship
William Hugh McEniry Memorial
Mecklenburg Junior Chamber of Commerce
Mecklenburg County Medical Society
Mumaw Engineering
National Association of Accountants—Herbert Conner Scholarship
North Carolina Association of the American Institute of Certified Public Accountants—Charlotte Chapter
Nursing Honors Scholarship
Package Products Company, Inc.
Mr. and Mrs. Jesse W. Page
The Artemis J. Paschal Scholarship Fund
Peat, Marwick, Mitchell Accounting Scholarship
Pepsi Cola Bottling Company
Pilot Club of Charlotte
Price Waterhouse Foundation, Inc.
Cecil Prince Scholarship
Professional Engineers Association—South Piedmont Chapter
Professional Engineers—Ladies Auxiliary
Puette Scholarship
Quote Club
The Ramseur Tutoring Fund
George A. Rawlings Scholarship
Refabco, Inc. Scholarship
George H. Roberts
Glenn G. Ritchie, Jr. Memorial Scholarship
Frank Sherrill Scholarship
Schoenith Scholarship-Loan
Servomation of Charlotte
Sheldon P. Smith Scholarship
Lonnie Sides Memorial
Sprague Electric Company
Joseph Carl Stepp Memorial
Charles H. and Clara Stone Scholarship
A.K. Sutton Scholarship
Mr. and Mrs. J.R. Thompson
Tate-Culbertson Scholarship for Black Students
UNCC Distaff Loan Fund
Cliff Westbrook Scholarship
Earle Whitton Scholarship
Mr. and Mrs.J.L. Winningham
Women in Construction of Charlotte
Women's Allied Auxiliary of N.C. Motor Carriers
Zonta Club of Charlotte

Employment

The Office of Student Aid assists the student in locating work on campus during his undergraduate years as part of the program of financial assistance. The University participates in the Federal Work-Study program and often couples part-time work with scholarship or loan assistance to meet the financial need of a student.

The Placement Office assists the student in obtaining part-time, full-time or summer employment off campus and, whenever possible, endeavors to relate work experience to career objectives. (See more detailed statement under *Placement* pages 21-22.)

COURSES OF STUDY

Courses of Study

Following are courses offered by the University of North Carolina at Charlotte, listed by colleges and under the department or academic area concerned.

Courses are listed with a course number, the title of the course, the semester hours credit given in parentheses, prerequisites, if any, and a description of the subject matter of the course, with whatever requirements of class or laboratory hours are applicable. If no class hours are given, the number of class sessions per week is the same as the number of semester hours credit for the course.

Courses are, in general, numbered 100-199 for freshmen, 200-200 for sophomores, 300-399 for juniors and 400-499 for seniors. However, prerequisites for each course must be consulted to determine the student's eligibility to take that course.

Where a suggested degree program is not listed by a particular department, the student must arrange his program in consultaton with the department. However, every student should consult the department of his intended major to be certain that he is following an approved program which will enable him to progress logically and successfully to the conclusion of his degree program, and to fulfill the requirements of both the University and the major department or professional sequence.

Students intending to teach should consult both the major department and the College of Human Development and Learning.

College of Architecture

Acting Dean: Associate Professor Gallis
Professors: Anderson, Langhorst, Melaragno
Assistant Professors: Hauser, Marchant, Searl
Instructors: Busey, Vaseff
Visiting Associate Professor: Morgan
Visiting Assistant Professor: Easton
Part-time Lecturers: Carroll, Li, Ross, Whisnant

The objectives of the College of Architecture recognize the fundamental concern of the architect: the design and control of the physical environment. This concern is with respect to a broad range of scales, the organization of single buildings as well as the organization of large groups of buildings at the scale of the city and the systematic integration of these structures with the fabric of technological, societal and geophysical forces.

The basis and method of study in the College is conducted in an intellectual climate which promotes inquiry, deals with the fundamentals of objective problem solving and teaches the essential balance between analysis and synthesis necessary to solve the problems of the physical environment facing contemporary society. In summary the administrative policy, the curricula and the teaching methods are designed to support most usefully the education of the architect in a rapidly changing world.

Teaching is highly individual, with each instructor working directly with small groups of students in the studio. The focus is primarily on process; however, through a program of visiting distinguished lecturers and exhibitions, the student is afforded the opportunity of direct contact with contemporary professional practice. Our task then is to search continually for and develop new techniques and methods of teaching problem solving, to develop new means of communication with other disciplines, to have a qualified and distinguished faculty, to develop significant research programs, to develop action-oriented programs in the community and to take full advantage of the resources of the University and the region.

The nature of the problems facing our society coupled with the unique location of Charlotte in a rapidly growing region create for us in the College of Architecture at the University of North Carolina at Charlotte some challenging opportunities for the education of the architect.

Graduates from the Bachelor of Arts in Architecture program are eligible for the professional program and could go on to graduate work in architecture or some related field such as planning, urban design, engineering or landscape architecture.

In addition, a graduate of the undergraduate program should be able to continue his studies in another discipline related to his education as an undergraduate or he may choose to leave the University with the Bachelor of Arts degree for outside employment.

The program is organized horizontally into first a Bachelor of Arts in Architecture and then a professional Bachelor of Architecture.

Bachelor of Arts in Architecture: This degree is a nominal four-year program requiring 132 semester credit hours, 68 hours in architectural course work, 18 hours in other courses required in the degree option, and 46 hours in electives, 14 of which are general education requirements by the University.

Bachelor of Architecture: The Bachelor of Architecture degree requires an additional 32 semester credit hours, 26 hours in architectural courses and six hours in electives for a total of 164 credit hours. The professional degree will be the one accredited by the National Architectural Accrediting Board and recognized by the State of North Carolina Architectural Registration Board for by-passing the professional equivalent exam. Any credits earned in the program will be applicable as education credits toward meeting the requirements of the State Board.

Vertically, the program is structured into three tracks: a Core Program, a Degree Option and Directed Electives.

Core Program: This consists of the sequence of seven-credit Studio/Seminars and Seminar/Directed Elective Option, totaling 56 hours for the Bachelor of Arts in Architecture and 70 for the Bachelor of Architecture. They are primarily problem-solving experiences supported by field work, research, lectures, reading and workshops. In the later years of the program, the student is expected to contribute from his parallel area of resource to the studio. To this end the student not only develops skills and insights related to architecture per se, but in group process and decision making as well. The Seminar/Directed Electives Option is substantially part of the advising program in that it is intended to explore the resource of the University and potential roles in the evolving practice of architecture. The result is information upon which to base the selection of electives.

Degree Option: At the present, only one option is offered, that leading to the professional degree. This structure is intended to permit other options when there is demand and opportunity. This part of the program consists of a four-course math sequence, a two-course English sequence, a two-course building system sequence and a two-course history of architecture sequence, each a three hour course—a total in the Bachelor of Arts in Architecture of 30 hours. The Bachelor of Architecture requires, in addition, one course each of history and building systems and two in professional practice, each again a three-hour course, for an additional 12 hours or 42 hours total. These courses fulfill University general education requirements for mathematics, English and humanities for the Bachelor of Arts.

Directed Electives: Of the 46 hours in this track, eight hours must be in natural sciences and six hours in social sciences to meet the general education requirements of the University. With this proviso, the whole track is to be designed in accordance with some overall scheme leading toward a chosen future beyond attainment of the degree.

JUNIOR YEAR

hitecture 301 TUDIO/SEMINAR 7	Architecture 302 STUDIO/SEMINAR 7
hitecture 303 ISTORY (*Degree ption*) 3	Architecture 304 BUILDING SYSTEMS (*Degree Option*).....3
ctive.....3	Elective.....3
ctive.....3	Elective.....3
16	16

SENIOR YEAR

hitecture 401 TUDIO/SEMINAR 7	Architecture 402 STUDIO/SEMINAR 7
hitecture 403 ISTORY (*Degree ption*) 3	Architecture 404 BUILDING SYSTEMS (*Degree Option*).....3
tive.....3	Elective.....3
tive.....3	Elective.....3
16	16

l Requirements for Bachelor of Arts in Architecture: 132 Hours

PROFESSIONAL YEAR

itecture 501 UDIO/SEMINAR 7	Architecture 502 STUDIO/SEMINAR 7
itecture 503 STORY (*Degree ption*) 3	Architecture 504 BUILDING SYSTEMS (*Degree Option*).....3
itecture 505 ROFESSION (*Degree ption*) 3	Architecture 506 PROFESSION (*Degree Option*) 3
tive.....3	Elective.....3
16	16

l Requirements for Bachelor of Architecture: 164 Hours

COURSE DESCRIPTIONS

HITECTURE

101. STUDIO/SEMINAR. (7) (15 hours per week contact). Prerequisite: major in College of Architecture or consent of the dean. amental concepts of objective problem solving as related to the al nature of geophysical, societal and technological determinants of ems in the physical environment. A sequence of related projects in the student develops an understanding of the principles of em solving in architecture.

The responsibility for the design is the student's, but it is done with faculty adviser and the insight from the Directed Electives Seminar. Th opportunities vary but might be either degree studies or area studies i 1) environmental science: biology, botany, ecology, chemistry, eart science or physics; 2) human science: psychology, sociology anthropology, criminal justice, education or political science; or 3 technology: creative arts, computer science, mathematics or urba engineering. It might be decided to gain a broad background by selectin courses from many areas.

Admission to the pogram requires, in addition to admission to th University, an interview with a member of the College Admissio Committee. Transfer students are given full hour credit for everythin that is acceptable to the College Admissions Committee. Specific cours credit is given when, in the opinion of the College Admissio Committee, the work is equivalent to that offered here. Thus, advance standing in the program is possible.

CURRICULUM REQUIREMENTS FOR THE BACHELOR OF ARTS IN ARCHITECTURE AND THE BACHELOR OF ARCHITECTURE

FRESHMAN YEAR

Architecture 101 STUDIO/SEMINAR	7
Mathematics 120 (*Degree Option*)	3
English 101 (*Degree Option*)	3
Elective	4
	17

Architecture 102 STUDIO/SEMINAR	
Architecture 104 SEMINAR/DIRECTED ELECTIVE OPTIONS	
Mathematics 221 (*Degree Option*)	
English 102 (*Degree Option*)	
Elective	

SOPHOMORE YEAR

Architecture 201 STUDIO/SEMINAR	7
Mathematics 122 (*Degree Option*)	3
Elective	3
Elective	4
	17

Architecture 202 STUDIO/SEMINAR	
Mathematics 311 (*Degree Option*)	
Elective	
Elective	

ARC 102. STUDIO/SEMINAR. (7) (15 hours per week contact). Prerequisites: major in College of Architecture, ARC 101. Non-major, consent of dean. Development skill in the synthesis of geophysical determinants inherent in architectural problems in the physical environment. A sequence of related projects in which the student develops an understanding of the relationships between natural phenomena and architecture.

ARC 104. SEMINAR/DIRECTED ELECTIVE OPTION. (0) (2 hours per week contact). Seminars on the academic and professional relatedness of other disciplines to architecture. Discussion of the professional potentials generated through the choice of a specific group of courses in the Elective Option. Description of the interdisciplinary resources available within the University of North Carolina System.

ARC 201. STUDIO/SEMINAR. (7) (15 hours per week contact). Prerequisites: major in College of Architecture, ARC 102 and ARC 104. Non-major, consent of dean. Development of the ability to analyze geophysical determinants of architectural problems in the physical environment. A sequence of related projects in which the student develops an ability to analyze relationships between natural phenomena and architecture.

ARC 202. STUDIO/SEMINAR. (7) (15 hours per week contact). Prerequisites: major in College of Architecture, ARC 201. Non-majors, consent of dean. Development of knowledge and skill in the analysis and synthesis of technological determinants of architectural problems in the physical environment. A sequence of related projects in which the student develops the ability to analyze and use his analyses in understanding the relationships between technological processes, methods and tools and architecture.

ARC 301. STUDIO/SEMINAR. (7) (15 hours per week contact). Prerequisites: major in College of Architecture, ARC 202. Non-major, consent of dean. Development of knowledge and skill in the analysis and synthesis of societal determinants of architectural problems in the physical environment. A sequence of related projects in which the student develops the ability to analyse and use his analyses in understanding relationships between the goals, standards and expectations of social man and architecture.

ARC 302. STUDIO/SEMINAR. (7) (15 hours per week contact). Prerequisites: major in College of Architecture, ARC 301 and ARC 303. Non-majors, consent of dean. Use of analysis and synthesis for physical environmental problem solving in rural, urbanizing and urbanized environments.

ARC 303. HISTORY. (3) Prerequisite: ARC 202. Evaluation of geophysical and societal determinants affecting the solution of physical environmental problems from prehistoric to modern times. A series of lectures, films and symposia that deal with the historical relationships between natural and social forces and the development of philosophies, practices and physical organizations in architecture.

ARC 304. BUILDING SYSTEMS. (3) Prerequisite: ARC 301. Abstracted behavior of structural and environmental control systems in response to static and dynamic forces.

ARC 401. STUDIO/SEMINAR. (7) (15 hours per week contact). Prerequisites: major in College of Architecture, ARC 302 and ARC 304. Non-majors, consent of dean. Closed system organization of environmental determinants as related to parts of buildings, a building as a whole and groups of buildings.

ARC 402. STUDIO/SEMINAR. (7) (15 hours per week contact). Prerequisite: major in College of Architecture, ARC 401 and ARC 403. Non-majors, consent of dean. Open system organization of environmental determinants as related to individual buildings and groups of buildings.

ARC 403. HISTORY. (3) Prerequisite: ARC 303. Evaluation of technological determinants affecting the solution of physical environmental problems from prehistoric to modern times. A series of lectures, films and symposia that deal with the historical relationships between technological developments and architecture.

ARC 404. BUILDING SYSTEMS. (3) Prerequisite: ARC 401. Unique structural characteristics of various building materials as interdependent construction systems, and the unique characteristics of environmental control systems.

ARC 490. SEMINAR ON IDEAS IN DESIGN. (3) Prerequisite: consent of the instructor. An examination of aesthetics and the relationship of philosophic thoughts to design.

ARC 501. STUDIO/SEMINAR. (7) (20 hours per week contact.) Prerequisites: major in College of Architecture, B.A. in Architecture. Non-majors, consent of dean. Synthesis of closed and open system organization of geophysical, societal and technological determinants as related to groups of buildings, communities and urban systems.

ARC 502. STUDIO/SEMINAR. (7) (20 hour per week contact). Prerequisites: major in College of Architecture, ARC 501 and ARC 503. Non-majors, consent of dean. Synthesis of closed and open system organization of geophysical, societal and technological determinants as related to groups of buildings, communities and urban systems.

ARC 503. HISTORY. (3) Prerequisite: ARC 403. Analysis of the interaction of geophysical, societal and technological determinants affecting the solution of physical environmental problems from prehistoric to modern times. Projections of the future organization of rural, urbanizing and urbanized environments.

ARC 504. BUILDING SYSTEMS. (3) Prerequisite: ARC 501. Integration of structural and environmental control systems in response to static and dynamic geophysical, societal and technological determinants.

ARC 505. PROFESSIONAL. (3) Lecture and discussion; development of contract documents, alternative professional administrative procedures and the methods of synthesizing information from various sources relevant to the practice of architecture.

ARC 506. PROFESSIONAL. (3) Lecture and discussion; development of contract documents, alternative professional administrative procedures and the methods of synthesizing information from various sources relevant to the practice of architecture.

College of Business Administration

Dean: Professor Palmer

Objectives

The purpose of the educational programs in the College of Business Administration is to provide a broad educational base which will help prepare the student for responsible leadership in business and professional life. The College is committed to the educational development of men and women through study of the concepts and mastery of analytical skills which will prepare students for productive and meaningful careers.

The academic programs, methods of instruction and research efforts in the College are designed to maximize the opportunities for each student to develop his full intellectual potential. The programs reflect the application of evolving concepts and knowledge in accounting, economics, management, the behavioral sciences and the quantitative disciplines. The College of Business Administration, through its programs, attempts to serve effectively the needs of the business and professional community, other units of the University and the local, state and federal governments.

Programs

The College of Business Administration has approximately 1,600 students enrolled in its three academic programs. These are the Bachelor of Arts in Business Administration, the Bachelor of Science in Accounting, which offers full academic preparation for the Certified Public Accountant (CPA) designation, and the Bachelor of Arts in Economics.

The College also offers a Master of Management program at the graduate level. This program is designed for men and women who are fully employed and must undertake graduate study on a part-time basis. *Further information concerning the graduate program may be found in the UNCC Graduate Catalog.*

Programs are designed so transfer students from community colleges and other institutions may enter the program and complete their degree requirements in the last two years of their college work. Students planning to take their first two years in community colleges should inform their adviser or counselor of their intent to apply to UNCC so that their program may be tailored to facilitate transfer.

More than half the students in the College of Business Administration are transfer students, and many students work at part-time jobs which are closely related to their field of study. Students working more than 20 hours per week should reduce their academic load.

Evening Programs and Summer Sessions

All courses required in the Business Administration and Accounting degree programs are offered in the evening. The Master of Management program is offered entirely in the evening. A full program of summer offerings is also available.

Scholarships

There are a number of scholarships available for both men and women studying in the College of Business Administration. Several of the scholarships are designated to recognize academic excellence in the junior and senior years. *Further information can be obtained from the Financial Aid Office at UNCC*

Careers

Graduates in the Business Administration program may enter careers in:

Sales and Marketing
Banking and Finance
Transportation
Personnel
Manufacturing
Insurance
Public Administration
Management

Accounting graduates find careers in:
Public Accounting
Internal Auditing
Government Accounting
Controllership
Management

Economic Graduates often enter careers in:
Business Economic Analysis
Teaching
Research
Government

DEPARTMENT OF ACCOUNTING

Chairman: Professor Turner
Associate Professors: Hinson, Williamson
Assistant Professors: Godfrey, Higgins, Jolly
Instructor: Barnes
Lecturers (part-time): Amen, Chitty, Gallier, Hockfield, Johnson, Wallace

A major in Accounting leading to the B.S. degree consists of 27 semester hours of Accounting courses, 33 semester hours of related work in business administration, economics and mathematics as listed below.

I. Accounting
Principles of Accounting (ACC 201 and 202) ..... 6 hrs.
Managerial Cost Accounting (ACC 371) ..... 3 hrs.
Intermediate Financial Accounting (ACC 374 and 375) ..... 6 hrs.
Specialized Accounting Topics (ACC 471) ..... 3 hrs.
Internal Control and Auditing (ACC 475) ..... 3 hrs.
Federal Taxation (ACC 477 and 478) ..... 6 hrs.

II. Business Administration
Marketing Management (BUS 310) ..... 3 hrs.
Financial Management (BUS 320) ..... 3 hrs.
Business Law I (BUS 350) ..... 3 hrs.
Operations Management (BUS 300) ..... 3 hrs.
Management of Human Resources (BUS 340) ..... 3 hrs.

III. Economics
Principles of Economics (ECO 201 and 202) ..... 6 hrs.

IV. Mathematics
Basic Concepts of Mathematics (MAT 101) ..... 3 hrs.
Calculus (MAT 120) ..... 3 hrs.
Algorithmic Languages (CSC 100) ..... 3 hrs.
Statistics (MAT 122) ..... 3 hrs.

Students who complete a major in Accounting will meet the educational requirements to take the North Carolina Certified Public Accountant Examination.

In addition to the University requirement of a 2.0 minimum quality point average, a student must have at least a 2.0 quality point average in all 300 and 400-level required accounting courses in order to obtain a B.S. Degree in Accounting.

RECOMMENDED CURRICULUM FOR THE B.S. DEGREE IN ACCOUNTING

FRESHMAN YEAR

English 101 3	English 102 3
Laboratory Science 4	Laboratory Science 4
Mathematics 101 3	Mathematics 120 3
Humanities 3	Humanities 3
Elective (1) 2	Elective (1) 2
—	—
15	15

SOPHOMORE YEAR

Principles of Economics (ECO 201) 3	Principles of Economics (ECO 202) 3
Algorithmic Languages I (CSC 100) 3	Statistics (MAT 122) 3
Principles of Accounting (ACC 201) 3	Principles of Accounting (ACC 202) 3
Elective (2) 6	Elective (2) 6
—	—
15	15

JUNIOR YEAR

Intermediate Financial Acct. I (ACC 374) 3	Intermediate Financial Acct. II (ACC 375) 3
Marketing Management (BUS 310) 3	Operations Management (BUS 300) 3
Management of Human Resources (BUS 340) 3	Managerial Cost Acct. (ACC 371) 3
Electives (2) 6	Electives (2) 6
—	—
15	15

Business Law I (BUS 350) 3	Internal Control and Auditing (ACC 475) 3
Income Taxation for Individuals (ACC 477) 3	Advanced Income Taxation (ACC 478) 3
Financial Management (BUS 320) 3	Electives (3) 9
Specialized Acct. Topics (ACC 471) 3	—
Elective 3	15
—	
15	

A minimum of 12 hours of electives must be taken from courses other than those offered in the College of Business Administration. Behavioral sciences and communication courses are recommended for inclusion in the 12 hours of electives.

For those students planning to take the CPA exam, it is recommended that they take the following additional courses in their senior year:

Business Law II (BUS 450) ..... 3 hrs.
Management Science (BUS 431) ..... 3 hrs.
CPA Preparation (ACC 479) ..... 3 hrs.

COURSE DESCRIPTIONS

ACCOUNTING

ACC 201. PRINCIPLES OF ACCOUNTING I. (3) A study of fundamental accounting principles, with emphasis on managerial use of accounting data and analysis of financial statements. Three lecture hours and one laboratory period of two hours a week. The laboratory period is optional unless scheduled for an examination.

ACC 202. PRINCIPLES OF ACCOUNTING II. (3) Prerequisite: Accounting 201. A study of basic accounting theory, corporate financing and reporting; financial planning; and an introduction to managerial accounting. Three lecture hours and one laboratory period of two hours a week. The laboratory period is optional unless scheduled for an examination.

ACC 371. MANAGERIAL COST ACCOUNTING. (3) Prerequisite: Accounting 202. An analysis of the uses of accounting data in planning, controlling and decision-making processes of business enterprises. Three lecture hours and two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 374. INTERMEDIATE FINANCIAL ACCOUNTING I. (3) Prerequisite: ACC 202. An in-depth analysis of the requirements of outsiders (investors, auditors and governments) for information about the status and operations of firms. The application of various theories and concepts will be stressed. Three lecture hours and two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 375. INTERMEDIATE FINANCIAL ACCOUNTING II. (3) Prerequisite: ACC 374. A continuation of ACC 374 with an emphasis on accounting problems peculiar to corporate organizations and governmental units. Three lecture hours, two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 385. FEDERAL INCOME TAXATION. (3) Prerequisite: ACC 202. Open to non-accounting majors only. A study of federal income tax

laws and regulations applicable to individuals and business organizations. Three lecture hours, two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 471. SPECIALIZED ACCOUNTING TOPICS. (3) Prerequisite: ACC 375. Specialized accounting topics with emphasis on consolidated statements. Three lecture hours, two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 475. INTERNAL CONTROL AND AUDITING. (3) Prerequisite: ACC 375. An analysis of the accounting control systems and the independent auditor's examination of the system and other evidence as a basis for expressing an opinion on financial statements. Three lecture hours, two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 477. INCOME TAXATION FOR INDIVIDUALS. (3) Prerequisite: ACC 202. A study of federal income tax laws and regulations applying to individuals. Three lecture hours, two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 478. ADVANCED INCOME TAXATION. (3) Prerequisite: ACC 477. A study of federal income tax laws and regulations applying to partnerships, corporations, estates and trusts, and estate, gift and inheritance taxes. Three lecture hours, two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 479. CPA PREPARATION. (3) Prerequisite: ACC 471. Intensive study of principles and techniques involved in the solution of advanced accounting problems encountered in public accounting practice. Three lecture hours, two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 490. CURRENT DEVELOPMENTS IN ACCOUNTING. (1) (2) or (3) May be repeated for credit. Prerequisite: consent of the department. A research project will be required. Topics will be selected from internal and external auditing, governmental accounting, income taxes, managerial accounting and accounting theory.

DEPARTMENT OF BUSINESS ADMINISTRATION

Chairman: Rush S. Dickson Professor of Finance Walls
Professor: Palmer
Associate Professors: Conrad, Ruhe, Trosch, Williams
Assistant Professors: Barnes, Campbell, Geurin, Nilsson, Sage
Instructors: Cron, Swiger

The goals of the undergraduate program in business are to provide graduates with:

1. Specialized knowledge and skills enabling them to perform with competence upon graduation and progress rapidly in their profession.

2. Broad knowledge of business organization and processes enabling them to see individual functions from the perspective of the organization and to facilitate constructive change.

3. The qualities traditionally attributed to a liberal arts education at the university level; including a disciplined and inquiring mind, and understanding of one's culture and self.

To this end the Department offers a curriculum leading to the Bachelor of Arts Degree in Business Administration composed of the following major components:

1. *Prerequisites:* Courses necessary as preparation for business courses.

2. *The Business Core:* Business, Accounting and Economics courses designed to provide essential understanding of business processes and organization.

3. *Business Electives:* Courses designed to provide depth in specialized areas.

4. *Other Electives:* Throughout the undergraduate curriculum, a student can, and is encouraged, to elect courses outside the business area in following a personal interest or course of study which will add breadth and depth of understanding and complement the business degree. Elective hours can also be applied to *General Electives* offered by the Department.

To complete a program a candidate must complete the following courses:

1. *Prerequisites*—to be completed prior to enrollment in business courses.
   a. *Mathematics*
      Basic Concepts of Mathematics (MAT 101) ..... 3 hrs.
      Calculus (MAT 120) ..... 3 hrs.
      Statistics (MAT 122) ..... 3 hrs.

b. *Economics*
Principles of Economics (ECO 201 and 202) ..... 6 hrs.

c. *Accounting*
Principles of Accounting (ACC 201 and 202) ..... 6 hrs.

2. *The Business Core:* To be substantially completed before enrolling in business electives.
Operations Management (BUS 300) ..... 3 hrs.
Marketing Management (BUS 310) ..... 3 hrs.
Financial Management (BUS 320) ..... 3 hrs.
Management of Human Resources (BUS 340) ..... 3 hrs.
Business Law I (BUS 350) ..... 3 hrs.
Business Communications (BUS 360) ..... 3 hrs.
Business Policy (BUS 460) ..... 3 hrs.
Accounting 371 ..... 3 hrs.
Economics 325 ..... 3 hrs.

3. *Business Electives*
As elected by student ..... 9 hrs.

TOTAL HOURS REQUIRED ..... 57 hrs.

4. *Other electives:* 120 credit hours are required for graduation, and the student has 60 hours available as electives. These can be used as the student and his adviser deem advisable in designing a curriculum to meet student objectives. Possibilities include a concentration in areas such as the physical and social sciences, or other professional schools. In this way, the student can pursue non-business subjects in depth either to satisfy personal interest or augment the business degree for professional purposes.

In computing the quality point average in the major, all required courses are included.

TYPICAL PROGRAM FOR BUSINESS ADMINISTRATION

FRESHMAN YEAR

Fall		*Spring*	
*English 101	3 Hrs.	*English 102	3 Hrs.
*Math 101	3 Hrs.	*Math 120	3 Hrs.
*Lab Science	4 Hrs.	*Lab Science	4 Hrs.
*Humanities	3 Hrs.	*Humanities	3 Hrs.
Elective	3 Hrs.	Elective	3 Hrs.
Total	16 Hrs.	Total	16 Hrs.

* General Degree Requirement

SOPHOMORE YEAR

[1]*Eco. 201	3 Hrs.	[1]*Eco. 202	3 Hrs.
[1]Acc. 201	3 Hrs.	[1]Acc. 202	3 Hrs.
Electives	9 Hrs.	[1]Math 122	3 Hrs.
		Electives	6 Hrs.
Total	15 Hrs.	Total	15 Hrs.

JUNIOR YEAR

Eco. 325	3 Hrs.	Bus. 340	3 Hrs.
Acc. 371	3 Hrs.	Bus. 300	3 Hrs.
Bus. 350	3 Hrs.	Bus. 310	3 Hrs.
Bus. 360	3 Hrs.	Bus. 320	3 Hrs.
Elective	3 Hrs.	Elective	3 Hrs.
Total	15 Hrs.	Total	15 Hrs.

SENIOR YEAR

[2]Bus. Electives	6 Hrs.	[3]Bus. 460	3 Hrs.
Electives	9 Hrs.	[2]Bus. Electives	3 Hrs.
		Electives	9 Hrs.
Total	15 Hrs.	Total	15 Hrs.

COURSE DESCRIPTIONS

BUSINESS ADMINISTRATION

Core Courses

BUS 300. OPERATIONS MANAGEMENT (3) This course will provide an introduction and development of the management functions in manufacturing and non-manufacturing organizations. It will take a systems approach in providing an insight into the organizational environment, the basic operating functions, the problems and decisions a manager encounters and the solution techniques and models with which he deals. Computer application will be included where appropriate.

BUS 310. MARKETING MANAGEMENT (3) The objective of this course is to acquaint the student with the marketing concept and the various aspects of marketing and its interface with the external environment and other functional areas of the organization. It is aimed at developing breadth in the subject and providing a foundation for further study in marketing. At the same time, it will have wide enough coverage to stand alone for those who do not wish to concentrate in marketing.

* General Degree Requirement

[1] Prerequisites for Upper division required business courses

[2] These courses may be taken in business, accounting and/or economics at the 300 or 400 level

[3] To be taken after all required business core courses have been fulfilled

NOTE: It should be noted that a student needs only 120 hours for a B.A. Degree in Business Administration.

BUS 320. FINANCIAL MANAGEMENT (3) Prerequisite: ACC 371. Principles and problems of financial aspects of managing an individual company. Particular emphasis on financial analysis for use in managing capital structure, least-cost asset management, planning and control. Computer application will be included where appropriate.

BUS 340. MANAGEMENT OF HUMAN RESOURCES. (3) A managerial perspective of the influence of leadership, motivation, group dynamics, structure, communications, conflict and change on effective utilization and development of human resources. Emphasis is on applications in business, but the approach is also appropriate for management of hospitals, schools and other nonprofit organizations.

BUS 350. BUSINESS LAW I. (3) A study of the legal setting of business and its relationship to one's personal affairs. Topics covered include: the nature of law and the court system, torts, contracts, commercial paper, consumer credit, sales, partnerships, corporations, the employer-employee relationship, real and personal property.

BUS 360. BUSINESS COMMUNICATIONS. (3) The nature and problems of individual, interpersonal, and organizational communication in business. Various verbal techniques such as presentations, graphics, public speaking and writing will be developed and practiced for effective organizational and individual performance.

BUS 460. BUSINESS POLICY. (3) Prerequisites: All other required business core courses. Concerns the role of top management of the firm in integrating internal functions and environmental forces. Emphasis on defining economic, ethical, political and social factors affecting the firm and their consideration in setting goals and operating policies.

Business Electives

BUS 401. ADVANCED OPERATIONS MANAGEMENT (3) Prerequisite: BUS 300. This course through cases and/or management simulations will enable the student to apply the knowledge he attained in Operations Management. The student, through an application forum, should develop in greater depth his understanding of the operating functions of an organization.

BUS 410. MARKETING RESEARCH AND ANALYSIS (3) Prerequisite: BUS 310. The research course will provide the student with an understanding of marketing research and its usefulness in the organization. The course will deal with scientific marketing research methods with emphasis on collection, analysis and interpretation of data as applied to the solution of marketing problems.

BUS 411. PROMOTION. (3) Prerequisite: BUS 310. This course will cover all areas of marketing promotion, including such topics as advertising, media selection, selling, packaging and forms of sales promotion. This course will offer basic skills and techniques to allow the student to enter careers in advertising, sales or media.

BUS 420. FINANCIAL ANALYSIS. (3) Prerequisite: BUS 320. Application of appropriate theory and techniques to financial analysis for internal and external uses. Material taught in previous courses is integrated in analysis of individual firms for purposes such as determining debt capacity and stock valuation. Focus will vary from that of internal management to creditors and security analysts.

BUS 421. FINANCIAL INSTITUTIONS AND MARKETS. (3) Prerequisite: BUS 320. A study of financial institutions and money and capital markets which considers their roles in the intermediation process. Special emphasis is focused on the comparative financial policies of financial institutions considered in the context of their market environments.

BUS 430. ADVANCED BUSINESS ANALYSIS. (3) Prerequisite: BUS 300. A study of more advanced probabilistic business problems with extensive use of canned computer programs and preparing system models. The course will center on the application of decision theory to business problems.

BUS 431. MANAGEMENT SCIENCE. (3) Prerequisite: BUS 300. An analytical approach toward understanding the management process and solving management problems. Emphasis will be placed on exploring existing models, but the student should develop an insight for problem development and model building.

BUS 440. LEADERSHIP, PERFORMANCE, EFFECTIVENESS AND CHANGE. (3) Prerequisite: BUS 340. The nature and major dimensions of supervising in work organizations (business, government, hospitals, educational, etc.) in a changing environment. Emphasis on leadership theories and role functions in order to identify, measure and predict managerial effectiveness. The role of a leader as a change agent is particularly stressed. Methods and techniques of management and organizational development will be reviewed and utilized for leader development for optimum benefit to the firm and the individual leader. Case analysis and role play exercise used to simulate actual problems.

BUS 441. PERSONNEL ADMINISTRATION. (3) Prerequisite: BUS 340. The study of effectively selecting, utilizing, assessing and developing human managers as well as the role of the personnel department in administering human resources in a changing and demanding environment. Experience in developing and utilizing behavioral science research methods to assess effectiveness.

BUS 450. BUSINESS LAW II. (3) Prerequisite: BUS 350. The study of the Uniform Commercial Code. Subjects covered include sale of goods, commercial paper, bank deposits and collections, letters of credit, bulk transfers, documents of title, investment securities and secured transactions.

BUS 465. MANAGEMENT INFORMATION SYSTEMS. (3) Prerequisite: consent of the instructor. The principles of the structure and the analysis of the information flows within an organization are studied. The concept of a unified MIS system is stressed using both internal and external data sources.

BUS 370. PERSONAL FINANCE. (3) (No Prerequisite) A course in the management of personal and family financial affairs. Topics include family financial planning and budgeting, saving for financial emergencies, consumer purchases and the use of credit, security and real estate investments, protection against premature death or disability, providing retirement income, insurance needs, income and estate tax planning.

BUS 371. PRINCIPLES OF INSURANCE. (3) (No Prerequisites) A study of the different types of nonspeculative risks faced by individuals and businesses and the possible alternative methods of treating such risks. An examination of the specific application of these methods in regard to life, health, property, casualty and liability insurance contracts.

BUS 372. REAL ESTATE. (3) (No Prerequisites) A survey of problems involved in the acquisition, management and transfer of real estate. Topics include: real estate contracts and leases; deeds, mortgages and other liens; real estate brokerage; appraisals and financing; taxation; and governmental regulations.

BUS 373. SMALL BUSINESS MANAGEMENT. (3) (No Prerequisites) Consideration of opportunities and obstacles of starting and operating a small business. Emphasis will be on intergrating all managerial requirements (financial, marketing, operation, legal, logistics, accounting and behavioral) of owning and operating a small business. Study of opportunities and assistance provided by franchises, federal, state and local agencies. Practice in solving small business problems will be gained through case analysis.

BUS 374. INTERNATIONAL BUSINESS PROCESSES AND PROBLEMS. (3) (No Prerequisites) An introduction to the process, institutions and problems associated with exporting, importing and management of multinational businesses.

BUS 390. TOPICS IN BUSINESS. (3) Prerequisite: consent of the instructor. Topics from the area of Management and Administration. The course may be repeated for credit.

BUS 490. DIRECTED STUDY. (3 to 6 hrs. credit) Prerequisite: consent of the instructor. Enrollment granted only by permission of the faculty with whom the work will be performed. The student's work assignments will be designed by the student and faculty member who will oversee the project or study. The credit hours will be determined prior to enrollment and will be based on the particular project undertaken.

Chairman: Professor Wubben
Associate Profesors: Rogers, Davis
Assistant Professors: Jorgensen, Liner, Stone
Instructors: Kellmann, Renfro
Lecturers (part-time): Ramsey, Snider

The Department of Economics offers two courses of study leading to a B.A. degree. Students may select a major in economics with either a business administration emphasis or a social science emphasis.

Business Administraton Emphasis

A major in economics, with a business administration emphasis, leading to the B.A. degree consists of 54 hours specified as follows:

I. Mathematics:
Basic Concepts of Mathematics (MAT 101)* 3
Calculus (MAT 120)* 3
Introduction to Computers (CSC 101) 3

II. Economics:
Principles of Economics (ECO 201 and 202)** 6
Economics of the Firm (ECO 325) *OR*
Microeconomic Analysis (ECO 322) 3
Money and Banking (ECO 315) *OR*
Macroeconomic Analysis (ECO 323) 3
Econometrics (ECO 312) 3
Industrial Organization & Public Policy (ECO 480) 3

III. Business Administration and Accounting:
Principles of Accounting (ACC 201 and 202) 6
Financial Management (BUS 320) 3
Two of the Following:
Marketing Management (BUS 310)
Business Law I (BUS 350)
Operations Management (BUS 300)
Management of Human Resources (BUS 340) 6

IV. Economics Electives:
To be selected by the student from the 300 and 400-level offerings of the Department of Economics 12

Social Science Emphasis

A major in economics, with a social science emphasis, leading to the B.A. degree consists of 54 hours specified as follows:

I. Mathematics
Basic Concepts of Mathematics (MAT 101)* 3
Calculus (MAT 120)* 3
Introduction to Computers (CSC 101) 3

* Will satisfy general University requirement for mathematics or Foreign Language.
** Will satisfy the general University requirement for social science.

II. Economics

Principles of Economics (ECO 201 and 202)** 6
Microeconomic Analysis (ECO 322) 3
Macroeconomic Analysis (ECO 323) 3
Econometrics (ECO 312) 3
Evolution of Economic Thought (ECO 477) 3

III. Social Science Electives

Course work to be selected from at least three of the following disciplines: geography, history, political science, psychology, sociology 15

IV. Economics Electives

To be selected by the student from the 300 and 400-level offerings of the Department of Economics 12

In computing the quality point average in the major, all required courses except Mathematics 101 and Mathematics 120 are included.

It is recommended that students who plan to take graduate work in economics take additional work in mathematics and consult with their advisers concerning this recommendation.

B.A. IN ECONOMICS WITH BUSINESS ADMINISTRATION EMPHASIS

FRESHMAN YEAR

English 101 3	English 101 3
Mathematics 101 3	Mathematics 120 3
Laboratory Science 4	Laboratory Science 4
Humanities 3	Humanities 3
General University Elective ... 3	General University Elective ... 3
—	—
16	16

SOPHOMORE YEAR

Principles of Economics (ECO 201) 3	Principles of Economics (ECO 202) 3
Introduction to Computers (CSC 101) 3	Principles of Accounting (ACC 202) 3
Principles of Accounting (ACC 201) 3	General University Electives 9
General University Electives .. 6	—
—	15
15	

** Will satisfy the general University requirement for social science.

JUNIOR YEAR

Economics of the Firm (ECO 325)	3
Econometrics (ECO 312)	3
Financial Management (BUS 320)	3
General University Electives	6
	15

Money and Banking (ECO 315)	3
Economics Elective	3
Business Elective	3
General University Electives	6
	15

SENIOR YEAR

Industrial Organization & Public Policy (ECO 480)	3
Economics Elective	3
Business Elective	3
General University Electives	6
	15

Economics Electives	6
General University Electives	9
	15

B.A. IN ECONOMICS WITH SOCIAL SCIENCE EMPHASIS

FRESHMAN YEAR

English 101	3
Mathematics 101	3
Laboratory Science	4
Humanities	3
General University Elective	3
	16

English 102	3
Mathematics 120	3
Laboratory Science	4
Humanities	3
General University Elective	3
	16

SOPHOMORE YEAR

Principles of Economics (ECO 201)	3
Introduction to Computers (CSC 101)	3
Social Science Elective	3
General University Electives	6
	15

Principles of Economics (ECO 202)	3
Social Science Elective	3
General University Electives	9
	15

JUNIOR YEAR

Microeconomic Analysis (ECO 322)	3
Econometrics (ECO 312)	3
Social Science Elective	3
General University Electives	6
	15

Macroeconomic Analysis (ECO 323)	3
Economics Elective	3
Social Science Elective	3
General University Electives	6
	15

SENIOR YEAR

Economics Elective	3
Social Science Elective	3
General University Electives	9
	15

Evolution of Economic Thought (ECO 477)	3
Economics Electives	6
General University Electives	6
	15

COURSE DESCRIPTIONS

ECONOMICS

ECO 201. PRINCIPLES OF ECONOMICS-MACRO. (3) Topics considered include the scope and methodology of economics as a social science, the measurement of national income, the theory of national income determination, money and banking and monetary and fiscal policy.

ECO 202. PRINCIPLES OF ECONOMICS-MICRO. (3) Topics considered include the operation of the pricing mechanism of a market economy, the industrial organization of our contemporary capitalistic economy, problems of economic concentration and of agriculture, the theory of income distribution, international economic relationships and comparative economic systems.

ECO 302. CONSUMER ECONOMICS. (3) (Designed for Non-Majors) Survey of economic analysis applied to a variety of consumer problems. Topics include Determination of Family Income, Consumer Demand and Expenditures, Economics of Family Planning, Investment in Consumer Durables, Taxation and Government in Protection and Regulation.

ECO 303. ECONOMIC CONCEPTS. (3) Topics considered include both microeconomic and macroeconomic concepts. The scope and method of economics, the pricing mechanism of markets, the industrial organization of the capitalistic system, the measurement of national income, the theory of national income determination, money and banking and monetary and fiscal policy. Credit will not be given for ECO 303 where credit has been given for ECO 201 or ECO 202.

ECO 305. INDUSTRIAL RELATIONS. (3) Prerequisite: ECO 202. Systematic analysis of the sociological, economic and political forces affecting and affected by the work environment. Special emphasis on market structure, the small group, the legal environment and union structure.

ECO 306. LABOR ECONOMICS. (3) Prerequisites: ECO 201 and 202. The economic implications of basic phenomena in the field of labor, including wage and employment theory, collective bargaining, unemployment and social insurance. Historical and legal forces affecting the work environment are covered.

ECO 312. ECONOMETRICS. (3) Prerequisites: MAT 120 and CSC 100 or 101. An exposition of relevant economics parameters utilizing regression analysis and in-depth studies of relationships between explained and explanatory variables. Topics include simple and multiple regression and correlation, matrix algebra and tests of significance, all as related to the modern theory of econometrics. Frequent use of "packaged" computer programs will be made throughout the course.

ECO 314. RESEARCH METHODS. (3) Prerequisite: MAT 101 and 120, ECO 201 and 202. This course is an introduction to research in economics. It acquaints students with the major sources of data and information necessary to conduct research. Emphasis is placed on the application of elementary research methods to economic problems.

ECO 315. MONEY AND BANKING. (3) Prerequisite: ECO 201. The characteristics and functions of money in the modern economy. The operation of the U.S. banking system; monetary theory and policy.

ECO 317. BUSINESS AND ECONOMIC FORECASTING. (3) Prerequisite: ECO 201. The course analyzes fluctuations in economic activity, including production, employment, prices and industry sales. Topics considered include forecasting methods, business cycle theories, historical record, industry and sales forecasting.

ECO 322. MICROECONOMIC ANALYSIS. (3) Prerequisites: ECO 201 and 202. This course deals with various aspects of microeconomic analysis with its primary emphasis on the theory of utility and production functions. A detailed discussion of resource allocation is undertaken for the determination of optimum output and pricing by a firm operating under various market situations such as pure competition, monopoly, oligopoly and imperfect competition. Emphasis is placed on distribution and welfare theories.

ECO 323. MACROECONOMIC ANALYSIS. (3) Prerequisites: ECO 201 and 202. Pre-or-Corequisite: ECO 312. An analysis of economic aggregates, primarily of income determination. Special emphasis on the development of macroeconomic models and forecasting.

ECO 325. ECONOMICS OF THE FIRM. (3) Prerequisite: ECO 202. A consideration of economic analysis of particular importance to business firms with emphasis on decision-making. Topics covered include demand theory and forecasting; cost theory and analysis; price policies.

ECO 370. MONETARY AND FISCAL POLICY. (3) Prerequisite: ECO 201. An examination of the nature and content of economic behavior of the American economy. This course deals primarily with a critical examination of monetary and fiscal tools and their application with a view toward full employment, economic growth and price stability.

ECO 375. COMPARATIVE ECONOMIC SYSTEMS. (3) Prerequisite: ECO 202. An institutional and theoretical approach to competitive economics. Includes an analysis of the Marxian theoretical system as well as a comparison of capitalism, socialism and communism.

ECO 390. TOPICS IN ECONOMICS. (3) May be repeated for credit. Prerequsite: consent of the department. Topics from the areas of economic theory, economic development, consumer economics, welfare economics and current economic problems.

ECO 395. DIRECTED INDIVIDUAL STUDY. (Variable credit 1-3 hours. May be repeated for credit.) Prerequisites: junior standing and permission of the instructor and the department. This course involves the independent study of a theoretical and/or policy problem in a special area of economics. The student can pursue a particular problem to a depth much greater than can be undertaken within the scope of existing courses. The topics of the investigation may originate from the student or from the faculty member who will supervise the study.

ECO 416. PUBLIC FINANCE. (3) Prerequisite: Economics 370. The revenue and expenditure problems of governmental units. Intergovernmental financial relationships and the impact of federal fiscal policy upon the American economy.

ECO 435. ECONOMICS OF DEVELOPMENT. (3) Prerequisites: ECO 201 and 202. Different theories of economic growth and development are examined with a view to their application to varying economic and social systems. Current theoretical models are studied in order to determine their relevance to efficient allocation of resources to both the developed and the developing nations.

ECO 449. WORK-STUDY PROGRAM IN ECONOMICS. (3 to 6 hrs. credit, by determination of faculty committee.) Prerequisites: ECO 201, 202 and 312. Enrollment granted only by permission of a faculty committee from the College of Business Administration. Prior to enrollment, plans for the student's work assignment in this course must be completed. Assignments in government utilities, banking and other paid employment must utilize the techniques and principles learned in core requirements in economics. Work assignments require enough faculty contact with the student and employer to insure satisfactory performance by the student. Such assignments must be a minimum of three months full-time, six months half-time and other proportional periods of time.

ECO 471. INTERNATIONAL ECONOMICS. (3) Prerequisites: ECO 201 and 202. A survey of trade theories from classical mercantilism to the contemporary version. A detailed discussion of balance of payments, foreign exchange rate, capital movements and monetary reform proposals is undertaken. Special attention is given to an evaluation of international financial organization and regional groupings.

ECO 477. EVOLUTION OF ECONOMIC THOUGHT. (3) Prerequisite: ECO 202. The development of the great economic ideas of value, distribution, employment, with special emphasis on the foundations of classical economic thought.

ECO 480. INDUSTRIAL ORGANIZATION AND PUBLIC POLICY. (3) Prerequisite: ECO 202. An examination of the characteristics of various types of industries—competitive, oligopolistic, monopolistic and monopolistically competitive—and of the questions of public policy in dealing with problems created by industrial concentration.

College of Engineering

Dean: Professor Barnette

The College of Engineering offers two baccalaureate degree programs: the Bachelor of Science in Engineering (BSE) and the Bachelor of Engineering Technology (BET).

The Engineering Technology program is designed to provide an opportunity for graduates of two-year associate degree engineering technology programs to continue their education at the baccalaureate level. Details regarding this program are found under the Department of Engineering Technology section of this *Catalog*.

Bachelor of Science in Engineering

The Bachelor of Science in Engineering curriculum offers professional engineering education which can be used as the foundation for several different career objectives:

1) Some students will wish to prepare for a career as professional engineers in industry, in business or in consulting.

2) Some will look toward graduate study in order to prepare for careers in research, development or teaching.

3) Still others will desire a more general and more liberal engineering education with the objective of keeping a variety of career avenues open.

Whatever the objectives, there are several essential components in a sound program of engineering study. The curriculum must include a substantial content: (1) in the humanities and social sciences, (2) in the physical sciences, (3) in the mathematics, and (4) in the engineering sciences. Also, (5) there must be an in-depth experience in creative engineering design. The student preparing for graduate study, while including all these components in his undergraduate program, will place special emphasis upon science, engineering science and mathematics. The student expecting to accept employment in industry after four years of study will wish to emphasize the engineering sciences and creative engineering design. A high percentage of engineering graduates ultimately take on executive and management responsibilities in industries and firms which are based upon engineered products and engineering services. Therefore, some students will want to construct an elective option which includes business administration and economics offerings, and courses which will strengthen their communication skills.

There are many students who have not settled upon career objectives by the time they enter college, and some who may not develop specific objectives until later in their four-year program of study. These persons, if they have aptitude and interest in both technical and non-technical

areas of knowledge, have the opportunity to synthesize for themselves, with counsel and guidance, a program of study combining engineering and the humanities and social sciences. The combination of liberal and engineering education should offer the student an excellent opportunity to find meaning and self-fulfillment in a technological age, whatever career he may ultimately pursue.

The engineering curricula prescribed by the faculty of the University of North Carolina at Charlotte gives thorough attention to the five essential components of a sound program of study. Those elements which are considered basic to every program of study are specified in the curriculum outline and result in freshman and sophomore requirements which are essentially the same for all engineering students, except for the electives in the humanities and social sciences. This common basic core serves not only as the educational foundation for the professional engineering courses later in the program, but also provides solid preparation for the first phase of the Professional Engineering Registration Examination (EIT Exams).

A high degree of program flexibility is achieved through the use of *Minor Option* electives which provide the student with an opportunity to develop an individualized program within one of the professional engineering departments: Engineering Analysis and Design; Engineering Science, Mechanics and Materials; and Urban and Environmental Engineering. By the careful selection of elective courses the student may achieve a specialization in one of the more traditional fields of engineering (electrical, mechanical, civil) or an undergraduate foundation for some newly emerging fields (biomedical electronics, ocean engineering).

Requirements for the
Bachelor of Science in Engineering Degree

English 101	3
Humanities and Social Studies Electives	15
Economics 201 or 202	3
Mathematics 105, 141, 142, 241, 271	15
Physics 101, 102, 222	11
Chemistry 101, 101L	4
Science Elective	3
EGR 101 A, B, C; 102 A, B, C	6
ESM 241, 242, 311	9
Departmental Requirements*	42
Minor Option	15
	126

The professional core of the program is composed of the departmental major requirement and a group of Minor Option electives. The Minor Option is to be a coherent collection of courses designed to meet the specific professional goal of the individual student. This elective package may be used in several ways: (1) to develop a second area of interest, e.g., business administration, foreign languages, humanities, social and

* See the departmental section of the catalog for these specific requirements.

behavioral sciences; (2) to strengthen the major field of specialization; (3) to obtain significant depth within a particular area of specialization in his major field; (4) to build some strength in another engineering or technical field; (5) to strengthen the mathematics, science and engineering base preparatory to graduate study; (6) to support an interdisciplinary study program, e.g., biomedical electronics, computer science and engineering, biology and physiology related to ocean engineering.

Before undertaking any of the technical elective courses, the student will work out with his adviser a detailed study plan indicating the objectives of his educational program and how his choice of these electives meets these objectives. The requirement of pre-planning the technical and non-technical electives program is intended to assure maximum utilizatin of curriculum flexibility by actively involving the student in a personalized program of study which will be sound in the professional sense, will recognize and take advantage of his best motivations and highest capabilities, and will result in a broad and deep educational preparation for service to and fulfillment in the current technological society.

ACADEMIC REGULATIONS FOR COLLEGE OF ENGINEERING MAJORS

Repeating a Course

A student who is enrolled in the College of Engineering and who has received a grade of *C* or better, *H* or *P* in a course may repeat that course only if he has the prior approval of his counselor, department chairman and the dean of the College of Engineering (except for those listed as "may be repeated for credit"). Whenever a course in which a grade of *D* or *F* has been assigned is repeated, the last grade completely replaces the previous grade in computing the quality point average; however, all entries remain a part of the student's permanent academic record. Repeating a course more than once to raise a grade requires the prior approval of the dean of the College of Engineering.

Quality Point Ratio

The quality point ratio at the University of North Caroilna at Charlotte for a student enrolled in the College of Engineering is determined by multiplying the number of quality points for each grade by the number of semester hours credit received in that course and adding all accumulated quality points together, then dividing by the total number of semester hours the student has attempted, except those for which the student has received a grade of *I, W, H, P or NC.* When a course is repeated, no additional credit hours attempted accrue, and the quality points of the previous grade are replaced by those of the current grade.

Grade of W

A grade of *W* will be given only on or before 10 calendar days after the date on which preliminary unsatisfactory grade reports are due or if the student withdraws completely from the University.

Adding or Dropping a Course

No Engineering student will be permitted to drop a course after the time period specified under "Grade of *W*" above.

Requirements for Continued Enrollment in the College of Engineering

As a general rule, each student will be allowed to remain at the University of North Carolina at Charlotte for the first two semesters following his first enrollment, or, in the case of a part-time student, until the end of the semester in which he attempts his twelfth semester hour.

As a general rule, the summer sessions at the University of North Carolina at Charlotte shall be open to all students previously enrolled here, including students academically ineligible to continue during the regular academic year.

In order to remain in good standing the student's cumulative quality point ratio must be 2.00 or higher. The quality point deficit is the number of additional quality points which are required to increase the student's cumulative QPA to 2.00. A student with a quality point deficit between one and 13 will be placed on academic probation. A student with a quality point deficit of more than 13 will be suspended (except as stated above).

An Engineering student's eligibilty for continued enrollment is shown on a Table of Quality Point Requirements for Continued Enrollment in the College of Engineering. Copies of the table are available in the College of Engineering.

In determining a transfer student's eligibility to continue in the College of Engineering, his initial point in the table is considered to be at the minimum good standing level at the number of hours accepted at transfer.

A student will be suspended automatically if, after two successive semesters on probation (excluding summer sessions), he fails to achieve good standing.

COURSE DESCRIPTIONS

BASIC ENGINEERING

EGR 101 A, B, C. INTRODUCTION TO ENGINEERING PROBLEMS I. (1, 1, 1) An introduction to the concepts, techniques and tools used to solve engineering problems, including computational methods, engineering graphics and introduction to computer usage. NOTE: To satisfy BSE degree requirements, a student completes three courses of one credit-hour each.

EGR 102 A, B, C. INTRODUCTION TO ENGINEERING PROBLEMS II. (1, 1, 1) Prerequisite: EGR 101 or consent of instructor. A continuation of EGR 101. NOTE: To satisfy BSE degree requirements, a student completes three courses of one credit-hour each.

CONTINUING ENGINEERING STUDIES

The College of Engineering sponsors various special educational programs for practicing engineers, technologists, technicians and others in addition to its regular academic degree programs and courses. These include conferences, short courses, seminars and other continuing education programs designed to aid those practicing in the technical professions and occupations to keep abreast of the latest developments in the rapidly expanding technology. The courses listed below are offered regularly on a periodic basis, while many others are offered on demand.

PROFESSIONAL ENGINEERING - BASICS. Forty-five hours of work reviewing mathematics, chemistry, economics and the basic engineering sciences as preparation for the Professional Engineering Basics (EIT or Exam I) Examination.

PROFESSIONAL ENGINEERING - APPLIED. Fifty-four hours of work reviewing applications in chemical, civil, electrical and mechanical engineering and engineering economics as preparation for the Professional Engineering Principles and Practice (Exam II) Examination.

SURVEYING. Eight hours of work reviewing land surveying as preparation for the land surveying examination.

Anyone desiring information on these courses or requesting special offerings may contact the Office of the Dean of Engineering.

LIBERAL ENGINEERING STUDIES

The impact of technology on man's present condition and future prospects has until now received little formal study by engineers despite their close involvement. The College of Engineering has two objectives in initiating a bridge from the engineering arts to the liberal arts. The first is to respond to a major concern on the part of many of those students *not* majoring in engineering. Many of them realize that there are important social and environmental problems resulting from the radical present and future changes in technology, and it is the aim of these Liberal Engineering Studies to put the problems and their possible technical solutions into perspective.

The following courses are intended for non-engineering students who wish to explore various aspects of the societal-technological interactions.

LE 111. TECHNOLOGICAL BASES OF SOCIETY I. (3) Concepts underlying the systems which relate directly to the life of the individual in relation to the field of engineering. Emphasis on scientific ideas which are relevant to the student—which he should understand to participate in the decision of an age of rapidly changing technology. Specific topics include decision making, optimization, modeling and systems. This course is open only to non-engineering students. (May be taken with or without LE 151.)

LE 112. TECHNOLOGICAL BASES OF SOCIETY II. (3) Prerequisite: LE 111. A continuation of LE 111. Introduction to technological concepts which are applicable to the solution of problems of a social and economic, as well as a technical nature—problems which are rapidly becoming the frame of reference for contemporary society. Specific topics include patterns of change, feedback, stability and machines and systems. This course is open only to non-engineering students. (May be taken with or without LE 152.)

LE 151. TECHNOLOGICAL BASES OF SOCIETY - LABORATORY I. (1) Corequisite: LE 111. A laboratory course designed to illustrate the concepts presented in LE 111. Simulation of real life situations using simple laboratory equipment. This course is open only to non-engineering students. Two laboratory hours per week.

LE 152. TECHNOLOGICAL BASES OF SOCIETY - LABORATORY II. (1) Prerequisite: LE 151; corequisite: LE 112. A laboratory course designed to illustrate the concepts presented in LE 112. A continuation of LE 151. This course is open only to non-engineering students. Two laboratory hours per week.

LE 311. TECHNOLOGY IN HISTORICAL PERSPECTIVE. (3) Prerequisite: junior standing. Selected historical cases in science, applied science and technology are reviewed to show the impacts that technological advances have had on man's world. Emphasis is placed on the technologies and their effect on man's physical environment rather than on the resulting change in man's viewpoint toward society, economics or politics. This course is designed for non-engineering students.

LE 314. PROBLEMS IN ENVIRONMENTAL CONTROL. (3) Prerequisite: junior standing. Study of a range of environmental problems of interest to the class. The tracing of problem cases to their technological origins, the identification of available, feasible, technological solutions to the specific problems treated. On site inspection of industrial sources of pollution will be made in a series of field trips. No credit toward degree requirements for any student in the College of Engineering.

LE 316. ENERGY, POWER AND CONSERVATION. (3) Prerequisite: junior standing. A survey of historic, current and future power sources and devices that includes waterwheels and windmills, steam engines and turbines, internal combustion and jet engines, fission and fusion reactors and geothermal, tidal and solar power. Fuel resource reserves, costs, benefits and conservation will be studied. No credit toward degree requirements for any student in the College of Engineering.

The second objective is to make special provisions for those students majoring in engineering who find that their areas of interest are broader than can be accommodated by existing professional engineering curricula. Under the Minor Option program of the engineering curriculum, these students can elect a planned series of courses totaling at least 15 semester hours in an area of specialized interest other than

engineering. The student undertaking this option will work with both his engineering career counselor and a faculty adviser from his selected area of interest in planning his program.

DEPARTMENT OF ENGINEERING ANALYSIS AND DESIGN

Chairman: Professor Wayne
Associate Professors: Allen, Smith
Assistant Professors: Lee, Okon
Lecturers: Flattery, Jenkins (part-time), Pao (part-time)

A new type of professional, a systems engineer, is needed to assume a unique role in today's complex society. The curriculum of the Engineering Analysis and Design Department is structured to produce a graduate engineer who is just as specialized as his more traditionally trained colleague but with the capability of formulating solutions to problems that cut across the traditional boundaries. The systems-oriented approach enables the engineer to cope with the synthesis and analysis of the performance of mechanical and electrical systems in particular and to extend this methodology to physical systems in general.

An integrated six-semester sequence of courses, emphasizing the systems approach to analysis, forms the core of this curriculum. These courses are designed to take advantage of the similarity of the concepts, analysis techniques and models associated with the various disciplines. Emphasis is placed on the utilization of the computer to assist in the formulation, analysis and design of large systems.

A laboratory sequence of five courses is designed to serve two purposes: (1) to teach the basic techniques of instrumentation and (2) to relate the analytical methods developed in the classroom to the performance of real physical systems.

The curriculum requirements are flexible enough so that the student may synthesize a program of study to achieve his particular objectives and his desired degree of specialization. This is done through the use of the minor option, with the guidance and approval of the student's career counselor. If further specialization and a high degree of competence in a particular area are desired, the student may be encouraged to seek an advanced degree.

This systems approach to analysis, coupled with a judicious choice of a minor option, provides the student with a balanced and well-rounded education in the fundamentals of engineering which permit him to assume an active and creative position in modern society.

The professional option in Engineering Analysis and Design is accredited by the Engineers' Council for Professional Development.

The departmental requirements for a major in Engineering Analysis and Design are:

EAD 252 - Laboratory I	1
EAD 211 - Linear Networks I	3
EAD 212 - Linear Analysis I	3
EAD 311 - Linear and Dynamic Systems I	3
EAD 312 - Linear and Dynamic Systems II	3
EAD 321 - Fundamentals of Mechanical Design	3
EAD 332 - Fundamentals of Electronics and Semi-Conductors	3
EAD 342 - Electromagnetic Devices	3
EAD 351 - Laboratory II	1
EAD 352 - Laboratory III	1
EAD 381 - Computer Utilization in Engineering	3
EAD 411 - Automatic Control Systems I	3
EAD 412 - Automatic Control Systems II EAD 415 - Mechanical Vibrating Systems	3
EAD 451 - Laboratory IV EAD 452 - Projects Laboratory	2
ESM 341 - Mechanical Behavior of Solids ESM 321 - Introduction to Electromagnetic Fields	3
ESM 342 - Fluid Mechanics	3
	42

CURRICULUM OUTLINE
FOR THE
BACHELOR OF SCIENCE IN ENGINEERING

ENGINEERING ANALYSIS AND DESIGN

FRESHMAN YEAR

Physics 101	4	Physics 102	4
Engineering 101 A	1	Engineering 102 A	1
Engineering 101 B	1	Engineering 102 B	1
Engineering 101 C	1	Engineering 102 C	1
Mathematics 141	4	Mathematics 105	1
English 101	3	Mathematics 142	4
	14	Humanities or S.S.	3
			15

SOPHOMORE YEAR

EAD 211	3	EAD 212	3
ESM 241	3	ESM 242	3
Mathematics 241	3	Mathematics 271	3
Chemistry 101	3	Physics 222	3
Chemistry 101L	1	EAD 252	1
Economics 201	3	Humanities or S.S.	3
	16		16

JUNIOR YEAR

EAD 311	3	EAD 312	3
EAD 351	1	EAD 352	1
EAD 381	3	EAD 332	3
EAD 321	3	EAD 342	3
ESM 321 or ESM 341	3	Minor	3
Humanities or S.S.	3	Humanities or S.S.	3
	16		16

SENIOR YEAR

EAD 411	3	EAD 412 or EAD 415	3
EAD 451	1	EAD 452	2
ESM 342	3	ESM 311	3
Minor	3	Minor	3
Minor	3	Minor	3
Science Elective	3	Humanities or S.S.	3
	16		17

COURSE DESCRIPTIONS

ENGINEERING ANALYSIS AND DESIGN

EAD 211. LINEAR NETWORKS I. (3) Prerequisite or corequisite: Mathematics 142. Introduction to Kirchoff's current and voltage equations using oriented linear graph techniques. Formulation of cutset and circuit matrices. Terminal equations of network elements. Formulation of the primary and secondary systems of equations by matrix methods. Network theorems and equivalence. Power and energy functions.

EAD 212. LINEAR ANALYSIS I. (3) Prerequisite: EAD 211. Prerequisite or corequisite: Mathematics 271. A unified study of models and dynamical properties of mechanical, electrical and hydraulic systems. Emphasis is placed on the development and utilization of realistic mathematical models of physical equations with step, pulse and sinusoidal driving functions using Laplace Transforms. The vector transform as an introduction to sinusoidal steady state. Sinusoidal steady state and frequency response of networks.

EAD 252. LABORATORY I. (1) Prerequisite or corequisite: EAD 212. The first in a series of laboratories designed to develop an understanding of the principles and theory of parameter measurement and instrumentation. Instruction in the use of laboratory equipment and the development and application of experimental techniques. Three laboratory hours per week.

EAD 258. BASIC ELECTRICAL ENGINEERING LABORATORY. (1) Corequisite: EAD 268. A laboratory designed to supplement the student's knowledge and enhance his understanding of the principles and operation of electrical circuits, basic electronic devices and energy conversion devices. Not open to Engineering Analysis and Design majors. Three laboratory hours per week.

EAD 268. BASIC ELECTRICAL ENGINEERING. (3) Prerequisites: Physics 102 and Mathematics 144. A study of the fundamental concepts and methods of analysis used in electrical engineering. Topics to include: terminal characteristics of devices, analysis of d.c. and a.c. circuits, elementary operation of electronic devices, and electromechanical energy conversion devices. Not open to Engineering Analysis and Design majors.

EAD 311. LINEAR AND DYNAMIC SYSTEMS I. (3) Prerequisites: EAD 212. A unified study of models and dynamical properties of mechanical, electrical and hydraulic systems. Emphasis is placed on the development and utilization of realistic mathematical models of physical aspects of systems. Equation formulation, operational block diagrams and analog simulation. State variable techniques.

EAD 312. LINEAR AND DYNAMIC SYSTEMS II. (3) Prerequisite: EAD 311. A continuation of EAD 311 emphasizing system response characteristics in both the frequency and time domain. Introduction to system analysis techniques.

EAD 321. FUNDAMENTALS OF MECHANICAL DESIGN. (3) Prerequisite: ESM 242 or consent of the department. A study of the design process with examples drawn from the various engineering disciplines. Application of the basic principles of engineering to real world problems, including systems approach to mechanically oriented problems. Introduction to the concepts related to current enginering design problem areas such as noise, artificial environments and human factors.

EAD 322. MECHANICAL SYSTEMS DESIGN. (3) Prerequisites: ESM 341 or consent of the department. An introduction to the mechanical design and dynamic analysis of machine elements and systems; linkages, bearings, gears, springs and other mechanical components used in machine systems.

EAD 332. FUNDAMENTALS OF ELECTRONICS AND SEMICONDUCTORS. (3) Prerequisite: EAD 212. A study of fundamental concepts of principles embracing both vacuum tube and semiconductor theory. Semiconductor and vacuum tube parameters and characteristics. Small signal analysis and equivalent circuits. Rectifier circuitry, vacuum tube and gas tube power devices; thyratrons, ignitrons, etc. Photoelectric devices. Amplifier and oscillator characteristics and their configurations.

EAD 342. ELECTROMAGNETIC DEVICES. (3) Prerequisite: EAD 212. Magnetic circuits. Transformer principles, equations, circuits. Magnetic amplifiers. Incremental motion transducers. Field of distributed windings. Servo control transformers, selsyns.

EAD 351. LABORATORY II. (1) Prerequisite or corequisite: EAD 311. A study of the various generating, measuring and recording devices and evaluation of their accuracy. A study of the use of instrumentation to monitor operating systems and to determine the characteristics and behavior of physical devices. Three laboratory hours per week.

EAD 352. LABORATORY III. (1) Prerequisite: EAD 351. Prerequisite or corequisite: EAD 312. A continuation of EAD 351, emphasizing the experimental analysis techniques of modeling various systems and devices.

EAD 381. COMPUTER UTILIZATION IN ENGINEERING. (3) Prerequisite: junior standing in engineering or consent of instructor. The application of the digital computer to engineering analysis and design problems. Computer-aided analysis and design.

EAD 382. SWITCHING THEORY AND LOGIC DESIGN I. (3) Prerequisite: junior standing or consent of the instructor. An introduction to switching theory and logic design. Elementary topics in Boolean algebra. Combinational circuits, iterative networks and analysis of sequential circuits. The engineering aspects of logic design are emphasized, culminating in a hardware design problem coordinating the topics covered.

EAD 411. AUTOMATIC CONTROL SYSTEMS I. (3) Prerequisite: EAD 312. A study of transfer functions, block diagrams and signal flow graphs. Feedback control system characteristics. The performance and stability of feedback systems using root locus and frequency response methods. Time domain analysis of control systems. The design and compensation of control systems.

EAD 412. AUTOMATIC CONTROL SYSTEMS II. (3) Prerequisite: EAD 411. A study of state space techniques and useful state space methods. System stability. Controlability and observability of linear systems. The formulation of the state equations for discrete-time systems and the analysis of these systems by matrices. Analysis of nonlinear systems. Optimal control systems studies.

EAD 413. NONLINEAR ANALYSIS. (3) Prerequisite: EAD 312. Solutions of nonlinear problems using numerical methods, graphical methods, phase plane plots, analysis of singular points and analytical techniques. The use of analogs and duals for writing equations. The use of the analog computer and digital computer to solve nonlinear problems.

EAD 414. NETWORK SYNTHESIS. (3) Prerequisite: EAD 312. Positive real functions, their properties and methods of testing. Driving point synthesis of LC, RC and RL networks into Foster and Cauer

networks. One terminal pair RLC network synthesis using the Brune and Bott-Duffin methods. Realization of two terminal pair networks by ladders, Cauer networks, lattices and Darlington networks. Approximation method.

EAD 415. MECHANICAL VIBRATING SYSTEMS. (3) Prerequisite: EAD 212. A study of free and forced vibrations of systems with multidegrees of freedom. Transient vibrations, analog simulation, non-linear vibrations and the vibration of continuous systems.

EAD 421. MACHINE ANALYSIS AND DESIGN I. (3) Prerequisite EAD 322. Senior standing. Technical application of the basic principles of the mechanical science to the analysis of machines and mechanical systems. Methods of design of typical machine elements. Strength and deflection requirements.

EAD 422. MACHINE ANALYSIS AND DESIGN II. (3) Prerequisite: EAD 421. Synthesis of machines and mechanical systems. Analysis, creative design and selection of machines and machine elements.

EAD 431. ELECTRONICS. (3) Prerequisite: EAD 332. A study of electronic and semiconductor devices: transistor and vacuum tube power devices, audio and radio frequency amplifiers, tunnel diode amplifiers, high frequency amplifiers, feedback analysis of vacuum tube and transistor circuits, modulation and demodulation theory and related circuitry. Generalized oscillatory analysis.

EAD 432. COMPUTER ELECTRONICS. (3) Prerequisite: EAD 431. A study of logic and gate circuits, wave-shaping circuits, switching circuits, multivibrators, pulse circuits.

EAD 433. COMMUNICATION THEORY I. (3) Prerequisite: EAD 312. A study of information transmission and modulation systems. Transmission through electrical networks, analysis and comparison of modulation systems; sampling and noise.

EAD 441. ELECTRIC POWER SYSTEM ANALYSIS I. (3) Prerequisite: EAD 312 and ESM 321. A study of polyphase networks, power transmission lines and power network representations. System representations, network equations and solutions. Application of digital computer to power system analysis.

EAD 442. ELECTRIC POWER SYSTEM ANALYSIS II. (3) Prerequisite: EAD 441. A study of symmetrical components and their applications. Symmetrical and unsymmetrical fault and load considerations. Load flow problems and numerical methods. Economic operation and stability studies.

EAD 443. ELECTRIC MACHINERY. (3) Prerequisite: EAD 312. Direct-current machines, induction machine. Machines in control systems. Synchronous machines. Fractional horsepower motors.

EAD 451. LABORATORY IV. (1) Corequisite: EAD 411, and prerequisite: EAD 352. A continuation of EAD 352.

EAD 452. PROJECTS LABORATORY. (2) Corequisite: EAD 412 or EAD415. A project-oriented laboratory course designed to provide the student an opportunity to apply his undergraduate engineering education to practical real world problems.

EAD 481. SWITCHING THEORY AND LOGIC DESIGN II. (3) Prerequisite: EAD 382. A continuation of EAD 382 including sequential circuit synthesis, state assignments, and flow table reduction. Top-down design with stress on engineering considerations and applications.

EAD 482. DIGITAL SYSTEMS THEORY. (3) Prerequisite: EAD 382. The primary emphasis will be on the engineering aspects of digital systems design. Analysis and design of multiplexers, A/D and D/A converters, data communications, and system interfacing. Interrupt generation and processing.

EAD 483. INTRODUCTION TO ENGINEERING SIMULATION. (3) Prerequisite: EAD 381 or consent of instructor. A wide range of simulation-related topics will be introduced, including the theory of simulation, characteristics of current simulators, and trade-offs in simulation studies. This course will cover both continuous and discrete simulation with the primary course emphasis throughout being placed on the application of simulation techniques to engineering problems. Simulation of actual problems from the students' interest and experience areas will constitute a significant portion of the coursework.

EAD 490. SPECIAL TOPICS IN ENGINEERING ANALYSIS AND DESIGN. (Variable credit 1-4 hours. May be repeated for credit.) Prerequisite: consent of the department. The course will build upon and synthesize the knowledge the students have gained from the engineering science, mathematics and physical sciences stem of the core curriculum. The specific topics covered in each separate offering of the course will serve as the vehicle for teaching engineering analysis, synthesis, and design, while simultaneously affording an opportunity for the students to point themselves toward an area of specialization.

EAD 491. UNDERGRADUATE RESEARCH. (Variable credit 1-4 hours. May be repeated for credit.) Prerequisie: consent of the department. This course involves the independent study of a theoretical and/or experimental problem in a specialized area of engineering analysis and design. The student can pursue some particular area or problem to a depth much greater than can be undertaken within the scope of existing courses.

EAD 492. INDIVIDUALIZED STUDY. (Variable credit 1 - 3 hours. May be repeated for credit.) Prerequisite: consent of the department. Supervised individual study within an area of a student's particular interest which is beyond the scope of existing courses.

DEPARTMENT OF ENGINEERING SCIENCE, MECHANICS AND MATERIALS

Chairman: Professor Snyder
Professor: Houghton
Associate Professors: Crippen, Kim, Mohanty
Assistant Professor: Coleman
Lecturer: (part-time) Gibbon

The engineering sciences are identified as those areas of engineering which emphasize the application of the fundamental principles of the physical sciences to engineering problems. Some classical engineering areas recognized to fall within this field include the thermal sciences, heat transfer, engineering mechanics, engineering materials, electric and magnetic fields and physical electronics.

Using the flexibility provided by the BSE Major Option-Minor Option provisions and with careful planning with his engineering career counselor, a student can develop a variety of educational programs which would provide the background for professional engineering licensing and practice in any of the areas included within the general field of engineering science or in one of its specialized areas. He can also develop an individualized study program in one of the newly emerging interdisciplinary fields involving the merger of engineering and the various science areas, such as biomechanics and biomaterials.

In addition to providing preparation for graduate work or engineering practice in any of the various fields of engineering science, the breadth of topics included within the engineering science courses provides a unique opportunity for the person interested in an exceptionally broad engineering education.

The professional option in Engineering Science, Mechanics and Materials is accredited by the Engineers' Council for Professional Development.

The departmental requirements for the Bachelor of Science in Engineering Degree with a major in Engineering Science, Mechanics and Materials are as follows:

Mathematics Course, 300 level or above	3
Science Elective	3
EAD 211, 212-Linear Networks and Analysis	6
ESM 252-ESM Lab I	1
ESM 312 - Thermodynamics II	3
ESM 321 - EM Fields	3
ESM 322 - EM Waves	3
ESM 341 - Introduction to Solid Mechanics	3
ESM 342 - Introduction to Fluid Mechanics	3
ESM 351 - ESM Lab II	1
ESM 352 - ESM Lab III	1
ESM 361 - Introduction to Engineering Materials	3
ESM 402 - Introduction to Continua	3

ESM 451 - ESM Projects Lab I	1
ESM 452 - ESM Projects Lab II	2
One additional 400-level ESM course	3

For students in the professional option, the minor option and the 400-level ESM elective must contain the equivalent of six hours of content in engineering design, synthesis, systems and/or integration of basic material from the several areas of ESM. The science elective will normally be chosen from chemistry courses, 200-level or above, or physics beyond 222. If it is consistent with his study plan, a student may be allowed to choose the science elective from an area other than physics or chemistry.

CURRICULUM OUTLINE
FOR THE
BACHELOR OF SCIENCE IN ENGINEERING
ENGINEERING SCIENCE, MECHANICS AND MATERIALS

FRESHMAN YEAR

Physics 101	4	Physics 102	4
Engineering 101 A	1	Engineering 102 A	1
Engineering 101 B	1	Engineering 102 B	1
Engineering 101 C	1	Engineering 102 C	1
Mathematics 141	4	Mathematics 105	1
English 101	3	Mathematics 142	4
	—	Humanities or S.S.	3
	14		—
			15

SOPHOMORE YEAR

ESM 241	3	ESM 242	3
EAD 211	3	EAD 212	3
Mathematics 241	3	Mathematics 271	3
Chemistry 101	3	Physics 222	3
Chemistry 101L	1	ESM 252	1
Economics 201 or 202	3	Humanities or S.S.	3
	—		—
	16		16

JUNIOR YEAR

ESM 311	3	ESM 312	3
ESM 321	3	ESM 322	3
ESM 341	3	ESM 342	3
ESM 351	1	ESM 352	1
ESM 361	3	Minor (a)	3
Humanities or S.S.	3	Humanities or S.S.	3
	—		—
	16		16

SENIOR YEAR

ESM 4xx (b)	3	ESM 402	3
ESM 451	1	ESM 452	2
Minor (a)	3	Minor (a)	3
Minor (a)	3	Minor (a)	3
Mathematics 3xx (c)	3	Science Elective (d)	3
Science Elective (d)	3	Humanities or S.S.	3
	16		17

(a) Minor Option
In addition to the general uses of the Minor Option outlined on pages 99-100, the ESM student could use this elective block to (1) obtain some depth within the broad area of engineering science by choosing a single advanced course from each of five engineering science fields; (2) obtain significant depth with a particular engineering science field through the use of available ESM, science, mathematics and engineering courses; (3) obtain a minor specialization in some other engineering or technical department; or (4) prepare for graduate work in engineering science, one of its specialized fields or some other engineering area by judicious elective selections within one of the three options above.

(b) A senior level ESM source elected to complement the student's overall educational objectives.

(c) An advanced applied mathematics course approved by the adviser.

(d) Three credit hours of an approved course from the physical, life or earth sciences complementing the student's overall educational plan satisfy the college degree requirement; the additional three credit hours satisfy departmental science elective requirements described on the previous page.

COURSE DESCRIPTIONS

ENGINEERING SCIENCE, MECHANICS AND MATERIALS

ESM 241. ENGINEERING MECHANICS I. (3) Prerequisite or corequisite: Math 142. The first course of a two-semester sequence introducing the principles of particle and rigid body mechanics, with engineering applications. Force systems and resultants. The equilibrium of particles and rigid bodies. Friction. The kinematics and kinetics of particles. Work-energy and impulse-momentum principles and conservation laws.

ESM 242. ENGINEERING MECHANICS II. (3) Prerequisite: ESM 241. Prerequisite or corequisite: Math 241. Properties of areas and volumes. The inertia tensor. Introduction to the dynamics of systems of particles and of rigid bodies. Energy and momentum methods. Euler's equations. Plane motion of rigid bodies.

ESM 252. ESM LABORATORY I. (1) Prerequisite: EAD 211. The first of a series of laboratories designed to instruct the student in the use of laboratory equipment and to develop and apply the principles of experimentation and measurement. Three laboratory hours per week.

ESM 281. CONCEPTS OF ENGINEERING MECHANICS. (3) Prerequisite: Math 103A (plane trigonometry) or equivalent. Introduction to the concepts of forces, moments and stresses; mechanical properties of materials; mechanical failure and fracture; extensions to the behavior of various types of structures. Credits for this course may not be applied to the BSE or BET degrees.

ESM 311. THERMODYNAMICS I. (3) Prerequisites: ESM 241 or Physics 221 and Math 271. First and second laws of thermodynamics. Work and heat. Thermodynamic probability and entropy. Ideal and real gases. Nonreactive mixture of gases. Availability and irreversibility.

ESM 312. THERMODYNAMICS II. (3) Prerequisite: ESM 311. General thermodynamic relations; equations of state and generalized charts. Combustion, dissociation and chemical equilibrium. Introduction to statistical thermodynamics.

ESM 321. INTRODUCTION TO ELECTROMAGNETIC FIELDS. (3) Prerequisite: EAD 211. A study of electric and magnetic fields using the vector formulation. Vector analysis. Electrostatics: potential functions, dielectrics, capacitance, energy and forces associated with electric fields, solution of Laplace's and Poisson's equations. Magnetostatics: vector potential functions, Lorentz forces, hysteresis, magnetic polarization and induction, and energy. Gauss's, Ampere's, Faraday's laws, etc., leading to the Maxwell equations.

ESM 322. ELECTROMAGNETIC WAVES. (3) Prerequisite: ESM 321. A study of Maxwell's equations, transmission line theory, plane waves in media, propagation of electromagnetic waves in various media. The phenomena of reflection and refraction at interfaces of two dissimiliar materials. Guided electromagnetic waves in coaxial cables and waveguides.

ESM 331. INTRODUCTION TO ELECTRONIC MATERIALS. (3) Prerequisite: Physics 222 or 231. A survey of important classes of electronic materials and devices with examples from crystalline and amorphous semiconductors, junction and MOS devices, thermoelectrics, lasers and superconductors. Introduction to the quantum mechanics of electrons in solids, electron-atom interactions and energy band model, providing a basis for rationalizing a wide variety of electronic properties.

ESM 341. INTRODUCTION TO SOLID MECHANICS. (3) Prerequisite or corequisite: ESM 242, or prerequisite: ESM 241 and Math 241. An introduction to the technical theory of deformable solids and its applications. Stress and deformation resulting from axial loads and from torsion. Bending and shearing stresses in beams; beam deflection. Shear and bending moment diagrams; Mohr's circle for stress. Inelastic behavior is considered, as are time and temperature effects.

ESM 342. INTRODUCTION TO FLUID MECHANICS. (3) Prerequisite: ESM 241 and Math 241. A first course in fluid mechanics introducing the basic concepts of a fluid and the fundamentals of ideal and actual fluid flow. Topics covered include fluid statics, conservation principles, Bernoulli's equation, fluid flow in pipes, and measurement devices.

ESM 351. ESM LABORATORY II. (1) Prerequisite: junior standing in ESM. Laboratory experiments and development of basic experimental techniques necessary in the areas of engineering science, mechanics and materials. Three laboratory hours per week.

ESM 352. ESM LABORATORY III. (1) Prerequisite: ESM 351. Basic electronic principles, signal measuring, generating and recording devices; static and dynamic measurements; calibration of measuring devices. Three laboratory hours per week.

ESM 361. INTRODUCTION TO ENGINEERING MATERIALS. (3) Prerequisites: Chemistry 101 and Math 142. Types and classifications of materials. Atomic, molecular and crystal structure with particular interest on the structures of metals, ceramics and polymers. Phase diagrams, equilibrium and an introduction to phase transformations.

ESM 362. MECHANICAL BEHAVIOR AND STRENGTHENING OF SOLIDS. (3) Prerequisite: Chemistry 101, prerequisite or corequisite: ESM 341. Mechanical properties of materials including elastic behavior, plastic flow, fracture, creep, fatigue, elevated temperature effects. Correlation of properties with atomic and microscopic structure. Dislocation theory and its application to mechanical behavior and strengthening mechanisms. Alloy hardening effects; effects of processing and heat treatments. Applications in Fe-C alloys.

ESM 402. INTRODUCTION TO CONTINUA. (1) Prerequisites: ESM 341, 342. Prerequisite or corequisite: ESM 322. A unified treatment of those topics which are common to all continua. Stress, deformation and velocity fields, constitutive equations and field equations. Representative applications in solid, fluid and electromagnetic continua, including interaction problems.

ESM 411. HEAT TRANSFER. (3) Prerequisites: ESM 311 and 342. Steady and unsteady state heat conduction, forced and natural heat convection principles, radiative heat transfer, heat exchangers.

ESM 412. ENERGY CONVERSION I. (3) Prerequisite or corequisite: ESM 411. Application of principles of thermodynamics, fluid flow and heat transfer to conventional energy conversion devices, such as compressors, turbines and heat exchangers.

ESM 413. ENERGY CONVERSION II. (3) Prerequisite: ESM 311. Study of conversion of heat into power. Thermoelectric, magnetohydrodynamic engines, thermionic converters, solar and fuel cells.

ESM 414. DYNAMICS AND THERMODYNAMICS OF COMPRESSIBLE FLOW. (3) Prerequisites: ESM 311 and 342. Compressible flow equations, isentropic flow, normal shock waves. Fanno and Raleigh line flows. Nonsteady one dimensional flow.

ESM 422. ANTENNAS. (3) Prerequisite: ESM 322. A study of radiation into free space, the point source, thin linear antenna, arrays of linear elements, aperture antennas, impedance, methods of feeding, matching and termination. A survey of various antenna systems.

ESM 426. ACOUSTICS. (3) Prerequisite or corequisite: ESM 322 or Physics 331. Vibrations and simple vibrating systems; radiating systems; plane waves of sound; dynamic analogies, microphones and other acoustic transducers; acoustic measurements.

ESM 431. PHYSICAL ELECTRONICS. (3) Prerequisite: ESM 322 or Physics 331. Dynamics of charged particles in static fields; electron motion in electromagnetic fields; types of electron emission; beam focusing; longitudinal and transverse beam waves; microwave generation; plasma parameters.

ESM 432. QUANTUM AND PARAMETRIC ELECTRONICS. (3) Prerequisites: ESM 322 or Physics 331. Introduction to the concepts of quantum mechanics; spin energy levels; elementary masers, optical resonance; traveling wave tubes; backward wave oscillators.

ESM 434. SOLID STATE ELECTRONICS. (3) Prerequisite: ESM 361 or Physics 241. Band structure of solids. Electric analog for an array of atoms. Electron transport mechanisms in conduction, diffusion, tunneling. Electronic models of varactors, tunnel diodes and solid state microwave devices.

ESM 441. INTERMEDIATE SOLID MECHANICS. (3) Prerequisite: ESM 341. More advanced treatment of the topics covered in ESM 341. Included are statically indeterminate problems, energy methods, plane stress—plane strain analysis, buckling of columns and strain rosette analysis.

ESM 442. INTERMEDIATE FLUID MECHANICS. (3) Prerequisites. ESM 311 and 342. A continuation of ESM 342. Topics covered include boundary layers, flow over body surfaces, compressible flow, turbomachinery and propulsion devices.

ESM 443. EXPERIMENTAL STRESS ANALYSIS. (3) Prerequisite: ESM 341. Theoretical and experimental techniques of stress and strain analysis, with experimental emphasis on electrical gages and instrumentation; brittle coatings and photoelasticity.

ESM 444. INTERMEDIATE DYNAMICS. (3) Prerequisite: ESM 242 and Math 271. Further studies in the dynamics of particles and rigid bodies, with engineering applications. An introduction to Lagrange's equations of motion. Multi-degree-of-freedom vibrations.

ESM 451. ESM PROJECTS LABORATORY I. (1) Prerequisite: senior standing in ESM. The first of a two semester sequence leading to a major laboratory project or design project involving integration of the various areas of the engineering sciences within the students particular area of specialization. Three laboratory hours per week.

ESM 452. ESM PROJECTS LABORATORY II. (2) Prerequisite: ESM 451. Continuation of ESM 451. Six laboratory hours per week.

ESM 461. SOLID STATE TRANSFORMATIONS. (3) Prerequisite: ESM 361. Thermodynamics, morphology and kinetics of solid state transformations. Diffusion and absolute reaction rate theory; crystallographic nature of phase transformations; nucleation and growth processes; precipitation; oxidation and scaling reactions.

ESM 462. MATERIALS PRODUCTION AND PROCESS. (3) Prerequisite or corequisite: ESM 361. Applications of thermodynamics and chemistry to extractive and process metallurgy. Fundamental principles of materials forming operations. Casting, mechanical working and joining methods.

ESM 464. DIFFRACTION AND SPECTROSCOPIC STUDIES OF MATTER. (3) Prerequisite: senior standing in engineering or science and consent of instructor. Atomic arrangements in crystalline and non-crystalline forms of matter. Symmetry properties of crystals and correlations with anisotropic physical properties. X-ray diffraction and spectroscopic analyses of matter. Theoretical and practical aspects of determining atomic and molecular arrangements in solids and fluids. Energy dispersive and nondispersive spectroscopic methods. Discussions of specific structures and techniques of current interest with examples drawn from polymeric, biological, metallic and non-metallic areas.

ESM 490. SPECIAL TOPICS IN ENGINEERING SCIENCE, MECHANICS AND MATERIALS. (Variable credit 1-4 hours. May be repeated for credit.) Prerequisite: consent of the department. The course will build upon and synthesize the knowledge the students have gained from the engineering science, mathematics and physcial sciences stem of the core curriculum. The specific topics covered in each separate offering of the course will serve as the vehicle for teaching engineering analysis, synthesis and design, while simultaneously affording an opportunity for the students to point themselves toward an area of specialization.

ESM 491. UNDERGRADUATE RESEARCH. (Variable credit 1-4 hours. May be repeated for credit.) Prerequisite: consent of the department. This course involves the independent study of a theoretical and/or experimental problem in a specialized area of engineering science, mechanics and materials. The student can pursue some particular area or problem to a depth much greater than can be undertaken within the scope of existing courses. The topics of the investigation may originate from the student or from the faculty member who will supervise the study.

ESM 492. INDIVIDUALIZED STUDY. (variable credit 1-3 hours. May be repeated for credit.) Prerequisite: consent of the department. Supervised individual study within an area of a student's particular interest which is beyond the scope of existing courses.

DEPARTMENT OF URBAN AND ENVIRONMENTAL ENGINEERING

Acting Chairman: Associate Professor Phelps
Professor: Celanese Professor of Civil Engineering Bell
Associate Professors: Bayer, Evett
Assistant Professor: Pinckney
Lecturers (part-time): Browning, Moussa, Sills

One of the major thrusts of the University of North Carolina at Charlotte is the establishment of ways in which urban problems can be identified and solutions found. The College of Engineering has in turn initiated a program in which urban and environmental aspects of engineering are emphasized. Traditionally many of these concerns have been treated within civil engineering, and all of the civil engineering courses at UNCC have been continued within the new Department of Urban and Environmental Engineering. In the curriculum, urban and environmental issues are the bases used for example problems, for student exercises and for independent study projects. In this department, the candidate for the degree of Bachelor of Science in Engineering will take a curriculum that prepares him to become a professional civil engineer upon completion of legal requirements as specified by the individual states.

The urban and non-urban problems of the environment can neither be distinctly separated, nor dealt with independently. The traditional functions of civil engineers to provide buildings and bridges, dams, harbors and canals, railroads and other facilities must be continued, while, at the same time, the urgent problems of the environment are assessed and solved. Thus, the department will emphasize urban problem areas associated with structural engineering, transportation engineering and environmental engineering. For example, more emphasis will be given to metropolitan traffic, while concern is continued in the area of interstate highways, and more emphasis will be given to water pollution problems while continuing the study of water resource systems and the building of water delivery systems for an increasing population.

Some students will wish to plan early in their undergraduate careers for continuation of their engineering studies beyond the first degree. The large number of fields of graduate study which can logically follow the curriculum offered by the Department of Urban and Environmental Engineering present detailed description of how each student should plan his program of study. The Minor Option sequence allows flexibility for such "Field" concentration, and each student will design his Minor Option program with his career counselor to achieve his individual goal.

The professional option in Urban and Environmental Engineering is accredited by the Engineers' Council for Professional Development.

The 42 hours of departmental requirements for UEE are:

CHE 102L - Principles of Chemistry Laboratory	1
EAD 258 - Basic Electrical Engineering Laboratory	1
EAD 268 - Basic Electrical Engineering	3
ESM 341 - Mechanical Behavior of Solids	3
ESM 342 - Fluid Mechanics	3
UEE 261 - Surveying	3
UEE 281 - Concepts of Structural Engineering I	3
UEE 282 - Concepts of Structural Engineering II	3
UEE 321 -Structural Analysis	3
UEE 341 - Environmental Engineering I	3
UEE 355 - Laboratory I	1
UEE 356 - Laboratory II	1
UEE 361 - Transportation Engineering I	3
UEE 421 - Structural Steel Design I	3
UEE 425 - Reinforced Concrete Design I	3
UEE 455 - Laboratory III	1
UEE 456 - Laboratory IV	1
UEE 468 - Geotechnical Engineering	3
UEE 471 - UEE Systems and Design I	3
UEE 472 - UEE Systems and Design II	3
	48

The professional curriculum emphasizes selection of engineering, scientific or mathematics in the five Minor Option courses. Those who instead take these options in the social and behavioral sciences receive a degree having the liberal option curriculum.

CURRICULUM OUTLINE
FOR THE
BACHELOR OF SCIENCE IN ENGINEERING

URBAN AND ENVIRONMENTAL ENGINEERING

The suggested order for taking courses is:

FRESHMAN YEAR

Physics 101	4	Physics 102	4
Engineering 101A	1	Engineering 102A	1
Engineering 101B	1	Engineering 102B	1
Engineering 101C	1	Engineering 102C	1
English 101	3	Mathematics 141	4
Humanities or S.S.	3	Mathematics 105	1
	13	Humanities or S.S.	3
			15

SOPHOMORE YEAR

Mathematics 142	4	Mathematics 241	3
Chemistry 101	3	Chemistry 102	3
Chemistry 101L	1	Chemistry 102L	1
Economics 201 or 202	3	ESM 241	3
UEE 261	3	EAD 258	1
Humanities or S.S.	3	EAD 268	3
	—	Humanities or S.S.	3
	17		—
			17

JUNIOR YEAR

Mathematics 271	3	ESM 242	3
ESM 341	3	ESM 342	3
UEE 321	3	Physics 222	3
UEE 341	3	UEE 356	1
UEE 355	1	Minor	3
UEE 361	3	Minor	3
	—		—
	16		16

SENIOR YEAR

ESM 311	3	UEE 456	1
UEE 421	3	UEE 468	3
UEE 425	3	UEE 472	3
UEE 455	1	Minor	3
UEE 471	3	Minor	3
Humanities or S.S.	3	Minor	3
	—		—
	16		16

COURSE DESCRIPTIONS

URBAN AND ENVIRONMENTAL ENGINEERING

Structural Engineering

UEE 281. CONCEPTS OF STRUCTURAL ENGINEERING I. (3) Prerequisite: Mathematics 100 or Computer Science 100. For students not majoring in engineering or technology. A brief introduction to structural materials and the concepts of stress and strain as applied to structures; structural statics; beams and columns; laboratory demonstrations and class problems.

UEE 282. CONCEPTS OF STRUCTURAL ENGINEERING II. (3) Prerequisite: UEE 281. A continuation of UEE 281 involving more complex structures; interconnected beams and columns; steel and reinforced concrete; buildings and bridges; arches, plates and shells; live loads, wind loads, and earthquake effects; laboratory demonstrations and class problems; computer applications in structural problems.

UEE 321. STRUCTURAL ANALYSIS. (3) Prerequisite: ESM 241. Analysis of statically determinate and indeterminate beams, trusses and frames under fixed and moving loads to include shear and moment diagrams, rough deflected shapes and deflections. Influence lines and criteria for moving loads. Indeterminate analyses to include methods of slope deflection, moment area, moment distribution and conjugate beams.

UEE 421. STRUCTURAL STEEL DESIGN I. (3) Prerequisites: UEE 321 and ESM 341. Analysis and design of structural steel components with emphasis on the fundamental theories necessary for a thorough understanding of the design procedure. Individual members are considered, including pure tension, pure compression, uniaxial and biaxial bending and combined bending and axial stresses. Current AISC Specifications used.

UEE 422. STRUCTURAL STEEL DESIGN II. (3) Prerequisite: UEE 421. Analysis and design of structural steel systems with emphasis on the fundamental theories necessary for a thorough understanding of the design of complete structures. Welded, riveted and bolted connections. Design of steel buildings, composite design, built-up beams and plate girders. Plastic analysis and design. Emphasis to be placed on various topics partially dependent upon student interest and goals. Current AISC Specifications used.

UEE 424. ADVANCED STRUCTURAL ANALYSIS. (3) Prerequisites: UEE 321. A continuation of UEE 321. Fundamental and special methods of analysis of statically determinate and indeterminate structures. Topics include deflection theory, energy theory, variable cross-section analysis, multistory moment distribution.

UEE 425. REINFORCED CONCRETE DESIGN I. (3) Prerequisites: UEE 321 and ESM 341. Analysis and design of reinforced concrete components with emphasis on fundamental theories. Mechanics and behavior of reinforced concrete. Flexural members to include singly and doubly reinforced beams of various cross sections (rectangular, T-beams, joists, one-way slabs and others). Shear in beams and columns. Short columns to include uniaxial and biaxial bending. Construction of short column interaction diagrams. Introduction to footings. Current ACI Specifications used.

UEE 426. REINFORCED CONCRETE DESIGN II. (3) Prerequisite: UEE 425. Analysis and design of reinforced concrete components and systems with emphasis on the fundamental theories necessary for a thorough understanding of concrete structures. Concentrically loaded slender columns, slender columns under compression plus bending. Footings and retaining walls. Continuous beams and frames. Buildings and bridges. Precast and prestressed concrete. Emphasis to be placed on various topics partially dependent upon student interest and goals. Current ACI Specifications used.

UEE 428. MATRIX METHODS OF STRUCTURAL ANALYSIS. (3) Prerequisites: UEE 321 or consent of instructor. Flexibility method of analysis for planar structures. Stiffness method of analysis for planar

orthogonal, planar non-orthogonal and three-dimensional structures with emphasis on computer applications.

UEE 455. LABORATORY III. (1) Prerequisites or corequisites: UEE 421 and UEE 425. Design of concrete mixes; testing of standard concrete cylinders, beams and columns. Testings of steel tensile members and beams. Analysis and design of simple structural systems. Three laboratory hours per week.

Environmental and Water Resources Engineering

UEE 341. ENVIRONMENTAL ENGINEERING I. (3) Admission by consent of instructor. Theory of supply, transmission and distribution of water; collection of waste-water; water quality; theory and design of water and waste-water treatment processes.

UEE 342. ENVIRONMENTAL ENGINEERING II. (3) Prerequisite: UEE 341. A continuation of UEE 341. Industrial wastes; stream and reservoir pollution abatement; river basin and estuarine studies; solid waste disposal and ground water pollution; air pollution sources, dispersion, and deposition; environmental effects of radioactivity.

UEE 355. LABORATORY I. (1) Prerequisite or corequisite; UEE 341. Laboratory problems in environmental engineering. Emphasis on analysis and presentation of results as well as on the significance of results as they affect theory and/or practice. Three laboratory hours per week.

UEE 444. ENGINEERING HYDROLOGY. (3) Admission by consent of instructor. A quantitative study of the various components of the water cycle, including precipitation, runoff, ground water flow, evaporation and transpiration, stream flow. Hydrograph analysis; flood routing; frequency and duration; reservoir design.

UEE 446. ENGINEERING HYDRAULICS. (3) Prequisites: ESM 342. Problems of fluids as applied in civil engineering; open channel flow; dams and spillways; water power; river flow and backwater curves; pipe networks, fire flow, sewage collection, groundwater; computer applications pertaining thereto.

Transportation and Geotechnical Engineering

UEE 261. SURVEYING. (3) Admission by consent of instructor. Elements of plane surveying including taping, transit, level, stadia, plane table, topographic surveying and mapping, care and adjustment of instruments; error adjustments; area and earthwork computations; introduction to photogrammetry; computer techniques. Periods of laboratory, lecture and field work will be scheduled.

UEE 356. LABORATORY II. (1) Prerequisite: UEE 361. Design of basic highway configurations involving route layout, geometric design, and earthwork operations. Three laboratory hours per week.

UEE 361. TRANSPORTATION ENGINEERING I. (3) Admission by consent of instructor. Development of transportation facilities; planning, location and economic considerations, with special emphasis on land transportation and computer applications pertaining thereto.

UEE 362. TRANSPORTATION ENGINEERING II. (3) Prerequisite: UEE 361. Urban transportation considerations: travel characteristics; characteristics of urban transportation systems; analysis of transportation-oriented studies; analytic methods of traffic distribution and assignment; urban layout and growth patterns.

UEE 456. LABORATORY IV. (1) Prerequisites or corequisites: ESM 341 and UEE 468. Demonstrations and experiments verifying theoretical bases of geotechnical engineering; cohesionless and cohesive soils. Three laboratory hours per week.

UEE 464. TRAFFIC ENGINEERING. (3) Prerequisite: UEE 361. Characteristics of vehicles and vehicle operators; investigative studies in traffic engineering; planning and implementation of traffic control devices; design of parking facilities; implications of traffic engineering decisions.

UEE 468. GEOTECHNICAL ENGINEERING. (3) Prerequisite: ESM 341. Theoretical bases of geotechnical engineering to include shear, stress and strain in soils and failure of soils; foundations; permeability and pore pressure; retaining structures, slope stability and earth dams; soil-structure interaction; soil dynamics; liquefaction; earthquake effects.

Urban Engineering, Design Engineering and Special Topics

UEE 412. COMPUTER APPLICATIONS IN URBAN AND ENVIRONMENTAL ENGINEERING. (3) Senior standing in engineering. The application of the digital computer to various types of urban and environmental engineering problems. Examinations in depth of selected urban and environmental engineering problems.

UEE 432. URBAN ENGINEERING. (3) Admission by consent of instructor. An examination of those societal problems of metropolitan regions most amenable to engineering solutions. Current urban literature will be reviewed in seminar, and selected topics amenable to engineering analysis will be studied. Written reports will be presented.

UEE 471. UEE SYSTEMS AND DESIGN I. (3) Admission by consent of instructor. Introduction to systems engineering as applied to urban and environmental engineering problems Organization of "consulting engineering companies" for preliminary planning, information gathering and data analysis on a specifiic urban and environmental engineering problem area chosen for each class. Assignment and scheduling of tasks resulting in contracts to be completed in UEE 472.

UEE 472. UEE SYSTEMS AND DESIGN II. (3) Admission by consent of instructor. Completion of "consulting engineering company contracts" established in UEE 471, resulting in a comprehensive written report and verbal presentation to the College of Engineering faculty and practicing engineers.

UEE 490. SPECIAL TOPICS IN UEE. (Variable credit 1-4 hours. May be repeated for credit.) Prerequisite: senior standing in UEE. This course will be devoted to specific new areas which are emerging in the various fields of urban and environmental engineering. Given at the senior level, the course will build upon and synthesize the knowledge the students have gained from the engineering science, mathematics and physical sciences stems of the core curriculum.

UEE 491. UNDERGRADUATE RESEARCH IN UEE. (Variable credit 1-4 hours. May be repeated for credit.) Prerequisite: consent of department. This course involves the independent study of a theoretical and/or experimental problem in a specialized area of UEE. The student can pursue some particular area or problem to a depth much greater than can be undertaken within the scope of existing courses. The topics of the investigation may originate from the student or from the faculty member who will supervise the study.

UEE 492. INDIVIDUALIZED STUDY. (Variable credit 1-3 hours. May be repeated for credit.) Prerequisite: consent of the department. Supervised individual study within an area of a student's particular interest which is beyond the scope of existing courses.

DEPARTMENT OF ENGINEERING TECHNOLOGY

Acting Chairman: Assistant Professor Christie
Associate Professors: Grant, Elliott, Liu, Phelps
Assistant Professors: Brown, Mobley, Priebe, Priory, Sheppard
Instructors: (part-time) Hayes, Petty, Wilkinson

Engineering and technical education have undergone considerable change in the last 25 years. The complexities of space exploration, nuclear power, communications systems, environmental control, information processing, transportation systems, etc. have demanded a great increase in the involvement of professional engineers in theoretical and analytical work. This has resulted in a much greater emphasis upon research and development, science and mathematics in professional engineering curricula.

At the same time, after the more complex devices and systems have been engineered, their design, development and operation require the sophisticated knowledge and skills of practitioners of what might be called the "applied engineering sciences." Programs dedicated to fulfilling this urgent need are now developing rapidly over the United States. The aim and content of these programs are distinctly different from professional engineering curricula.

To provide the appropriate distinction from both the theoretical-professional engineers and from the engineering technicians who are graduated from the two-year technical institutes, the designation "engineering technologist" is being used throughout the United States for the graduates of four-year applied engineering or "engineering technology" curricula.

The two-year technical institute programs in North Carolina and in many other states provide excellent foundation for engineering technology curricula. Therefore, the engineering technology program at the University of North Carolina at Charlotte is limited to the junior and senior years, and an Associated in Applied Science degree is required for admission.

Each of the following Baccalaureate Engineering Technology curricula is accredited by the Engineer's Council for Professional Development:

Civil Engineering Technology
Computer/Electronic Engineering Technology
Mechanical Engineering Technology

The ECPD is recognized by the National Commission on Accreditation as the appropriate accrediting agency of both Engineering and Engineering Technology curricula.

Requirements for the Degree of Bachelor of Engineering Technology

Residence

The residence requirement for the Bachelor of Engineering Technology degree at the University of North Carolina at Charlotte specifies that the last 30 semester hours of credit must be earned at UNCC and that the last 12 semester hours of work in the student's major field must be earned at this University.

Scholastic

A minimum level of scholastic achivement is required of all students in order to continue as a degree candidate (see Requirements for Continued Enrollment listed in the Academic Regulations for College of Engineering majors). In order to be eligible for the B.E.T. degree, a minimum Quality Point Average (QPA) of 2.00 on all courses attempted at UNCC is required. In addition, a minimum QPA of 2.00 on all courses attempted in the College of Engineering is required.

Course Requirements

Prerequisite courses for entering the Engineering Technology program normally taken at a technical institute or junior college, are listed on pages 126 and 127.

In addition, the following UNCC courses are required for the B.E.T. degree:

Title	*Semester Hours*
Chemistry 101 (or other Natural Science)	3*
Computer Science 100	3
Economics 201 or 202	3
Humanities or Social Science Electives	12
Free Electives	3
Major Electives	6*
Engineering Analysis	6*
Specified courses in major area of study	28*
Total	64
Transfer credit for A.A.S. degree	64
Total number of semester hours required for B.E.T. degree	128

Requirements for Admission

A student who has graduated from a technical institute or the technical division of a junior college and who wishes to enter the Engineering Technology program at UNCC must meet the following requirements:

1. Have an Associate in Applied Science degree in one of the following fields:

   Civil, Construction, Electronic or Mechanical Engineering Technology, or in Design and Drafting Technology.

2. Have an overall quality-point average of at least 2.20 (based on the 4.0 system) on all courses taken at the technical institute, and

3. Have satisfactorily completed the prerequisite courses for the option which he plans to enter (see below).

There is considerable variance in the contents of technical institute programs throughout the United States. Should this result in entrance deficiencies, the student can usually remove these deficiencies at Central Piedmont Community College in Charlotte prior to admission to UNCC, or during his first year at UNCC.

Background Courses Required for Entering the Bachelor of Engineering Technology Program

The student must have satisfactorily completed the following subjects in his two-year associate degree program.

* Differences exist for CET curriculum.

Quarter hours indicated are minima.

Descriptive Title	*Quarter Hours*
English Composition, Technical Writing and/or Public Speaking	9
Algebra, Trigonometry and Analytic Geometry with Calculus	13
*Differential and Integral Calculus	5
General Physics (with Laboratory)	8
*Physics or Chemistry (with Laboratory)	4
*Humanities or Social Sciences	6
*Non-technical Subjects	3
Technical Courses in Major Area	48**
Total	96

**The 48 hours of major work must include courses covering all of the subjects in any one of the areas shown on the following page.

Electrical
Drafting
D.C. Circuits
A.C. Circuits
Electronic Instruments and Measurements
Vacuum Tubes & Transistors
Transistor Amplifiers and Circuits
Pulse (Wave-shaping) Circuits
Communication Electronics or Control Systems

Civil
Drafting
*Surveying
Statics
Strength of Materials
*Properties of Concrete

Mechanical
Drafting
Machine Processes
Statics
Machine Design or Design Drafting
*Metallurgy
Strength of Materials

Construction (option of Civil)
Architectural Drafting
Architectural Engineering Materials and Methods
*Surveying
Construction Estimates and Costs
Codes, Contracts, and Specifications

* These courses can be taken at UNCC.

CURRICULUM REQUIREMENTS FOR THE BACHELOR OF ENGINEERING TECHNOLOGY DEGREE

Civil Engineering Technology

An ECPD Accredited Baccalaureate
Engineering Technology Curriculum

JUNIOR YEAR

CET 311	3	CET 312	3
CET 321	3	CET 332	3
CET 351	1	CET 352	1
ET 370	3	ET 371	3
CSC 100	3	ECON 202 or 201	3
CHE 101 or E.S. 102**	4	Humanities or Social Science Electives (b)	3
	17		16

SENIOR YEAR

CET 411	3	CET 462	3
CET 441	3	Major Elective (c)	6
ET 473	3	Humanities or Social Science Elective (b)	3
Major Elective (c)	1	Free Elective (d)	3
Humanities or Social Science Elective (b)	3		15
Humanities or Social Science Elective (b)	3		
	16		

Land Surveying Option of Civil Engineering Technology

The curriculum in Civil Engineering Technology which includes not less than six semester hours of surveying subjects (CET 472 and CET 473) is accredited by the North Carolina State Board of Registration for Professional Engineers and Land Surveyors, and such curriculum will be accepted as credit for four years of land surveying experience towards the registration requirements of this board.

** Students who are primarily interested in environmental technology must take Chemistry 101. Those who are primarily interested in construction must take Earth Science 102.

CIVIL ENGINEERING TECHNOLOGY
CONSTRUCTION ENGINEERING TECHNOLOGY OPTION

JUNIOR YEAR

CET 311	3	CET 312	3
CET 321	3	ET 482	3
CET 351	1	CET 353	1
ET 370	3	ET 371	3
CSC 100	3	ECON 202 (or 201)	3
ES 102	4	Humanities or Social Science Elective (b)	3
	17		16

SENIOR YEAR

CET 411	3	CET 412	3
CET 481	3	Major Elective (c)	6
MET 481	3	Humanities or Social Science Elective (b)	3
Major Elective (c)	1	Free Elective	3
Humanities or Social Science Elective (b)	3		15
Humanities or Social Science Elective (b)	3		
	16		

Electrical Engineering Technology
Computer/Electronics Engineering Technology Option

An ECPD Accredited Baccalaureate
Engineering Technology Curriculum

JUNIOR YEAR

EET 351	1	EET 311	3
EET 381	3	EET 312	3
ET 371*	3	EET 382	3
CSC 100	3	ET 471	3
CHE 101 (a)	3	Humanities or Social Science Elective (b)	3
ECON 201 (or 202)	3	EET 352	1
	16		16

* For students who do not have a strong background in algebra and trigonometry, it is recommended that ET 370 be taken prior to ET 371. This should be taken during the summer preceding his regular first semester if the student plans to complete his program in two years.

SENIOR YEAR

EET 481	3	EET 412	3
EET 452	1	EET 451	1
EET 411	3	Humanities or Social Science Elective (b)	3
EET 385	3	Humanities or Social Science Elective (b)	3
Major Elective	3	Major Elective (e)	3
Humanities or Social Science Elective (b)	3	Free Elective (d)	3
	16		16

Mechanical Engineering Technology

An ECPD Accredited Baccalaureate Engineering Technology Curriculum

JUNIOR YEAR

MET 311	3	MET 312	3
MET 331	3	MET 322	3
MET 351	1	MET 352	1
ET 371*	3	ET 471	3
CSC 100	3	ECON 202 (or 201)	3
CHE 101 (a)	3	Humanities or Social Science Elective (b)	3
	16		16

SENIOR YEAR

MET 411	3	MET 452	1
MET 341	3	MET 462	3
MET 453	1	MET 472	3
Major Elective (c)	3	Major Elective (c)	3
Humanities or Social Science Elective (b)	3	Humanities or Social Science Elective (b)	3
Humanities or Social Science Elective (b)	3	Free Elective (d)	3
	16		16

Notes

(a) A student who has previously taken a college-level course in general chemistry shall substitute for this requirement another course in chemistry, physics, biology, or earth science 101, 341 or 344, or an approved course in physics, as shown in the table below.

* For students who do not have a strong background in algebra and trigonometry, it is recommended that ET 370 be taken prior to ET 371. This should be taken during the summer preceding his regular first semester if the student plans to complete his program in two years.

Students who have previously taken	*Shall take at UNCC*
3 quarters of physics and no chemistry	Chemistry 101
2 quarters of physics and 1 quarter of chemistry	Physics 102 (Physics 101 with permission)
3 quarters of physics and at least 1 quarter of chemistry (4 qtr. hrs.)	Earth Science 101 or 102, Biology 101, or Physics 103

(b) Humanity and social science elective must be selected from a current list of approved courses which is maintained in the departmental office and shall include a minimum of one 200 and one 300-level course. A coherent plan of study covering all elective courses must be submitted by the student and approved by his adviser before the student enrolls in his first H/SS elective.

(c) Major electives must be 300 or 400-level courses related to the student's field of specialization, or 300 or 400-level course in business administration.

(d) Free electives are intended to provide the student an opportunity to take an additional departmental major course, to investigate other areas of interest outside the College of Engineering, to support an upper-division sequence in the humanities or social science, or to study a foreign language.

Courses selected as free electives should normally be 200-level or higher and must be approved by the student's adviser after the student has outlined the sequence of electives that he plans to pursue. No course may be taken for elective credit that covers material for which the student has received credit in another course. A maximum of three semester hours credit is allowed in physical education.

COURSE DESCRIPTIONS

Engineering Technology

An engineering technology course may be used for elective or minor credit by a student in another major only with the prior approval of the student's major department and the Department of Engineering Technology.

ET 370. BASIC ENGINEERING ANALYSIS. (3) Prerequisite: college algebra, trigonometry and analytic geometry. A course designed to give students intensive practice in the methods of solving engineering problems which require a knowledge of algebra, determinants, trigonometry and analytic geometry.

ET 371. ENGINEERING ANALYSIS I. (3) Prerequisite: differential and integral calculus. Methods of solving engineering problems which involve the differentiation and integration of algebraic, trigonometric and logarithmic functions; use of integral tables.

ET 471. ENGINEERING ANALYSIS II. (3) Prerequisite: ET 371. A study of constant coefficient linear differential equations, including non-homogeneous equations; Laplace transforms and the use of Laplace transform tables; applications to the analysis of dynamic systems.

ET 473. ENGINEERING ANALYSIS III. (3) Prerequisite: CSC 100 and ET 371. An introduction to elementary numerical methods which are useful in the solution of engineering problems on the digital computer. Emphasis is placed on applications to civil engineering technology.

ET 431. COMPUTER GRAPHICS TECHNOLOGY. (3) A study of the use of computer graphics as a design drafting tool. The course will utilize computer driven plotters and digitizer to prepare engineering drawings and illustrations.

ET 482. PROJECT MANAGEMENT TECHNOLOGY. (3) Use of CPM and PERT network analysis for planning, managing and controlling projects.

ET 490. SPECIAL TOPICS IN ENGINEERING TECHNOLOGY. (Variable credit, 1-4 hours. May be repeated for credit.) Prerequisite: senior standing in Engineering Technology or consent of the department. This course will be devoted to specific new areas which are emerging in the various fields of engineering technology. Given at the senior level, the course will build upon the knowledge the students have gained from their engineering technology curriculum.

Civil Engineering Technology

CET 311. STRUCTURAL ANALYSIS I. (3) Prerequisite: elementary courses in statics and strength of materials. Prerequisite or corequisite: ET 370. An introduction to the basic concepts and principles of structural analysis relating to beams, trusses and frame structures. Analysis of statically determinate structures under fixed and moving loads; influence lines for moving loads. Deflection of structures. Emphasis on practical aspects of structural analysis.

CET 312. STRUCTURAL ANALYSIS II. (3) Prerequisite: CET 311. Analysis of statically indeterminate structures using the method of three-moments, methods of least work, method of slope deflection and the moment-distribution method. An introduction to matrix methods of structural analysis.

CET 321. FOUNDATIONS AND EARTHWORK. (3) Prerequisite or corequisite: ET 370. A study of the basic design and construction of foundations. The background theories are generally introduced in concise forms as formulas or charts. Emphasis on practical aspects of foundation design and earthwork construction.

CET 332. HYDRAULICS. (3) Prerequisite or corequisite: ET 370. A study of the fundamental principles of hydraulics and their applications in engineering practice, including the fundamentals of fluid flow through orifices, tubes and pipes, in open channels, and over weirs.

CET 351. SOIL TESTING LABORATORY. (1) Prerequisite or corequisite. CET 321. A laboratory designed to familiarize the student with the common laboratory soil tests and analysis procedures with emphasis on the significance of the various tests, the testing procedures and the detailed computations.

CET 352. HYDRAULICS LABORATORY. (1) Prerequisite or corequisite: CET 332. Verification of some of the principles of hydraulics relating to fluid flow through orifices, tubes and pipes, in open channels, and over weirs.

CET 353. CONSTRUCTION SCHEDULING LABORATORY. (1) Prerequisite or corequisite: ET 482. A laboratory study of construction planning, equipment and methods. Emphasis will be placed on the student's understanding of the applications of the techniques being taught in ET 482. Three laboratory hours per week.

CET 411. REINFORCED CONCRETE DESIGN. (3) Prerequisite: CET 312. Design of rectangular beams, T-beams, columns, reinforced concrete floor systems and reinforced concrete footings, according to the ACI code.

CET 412. STRUCTURAL STEEL DESIGN. (3) Prerequisite: CET 312. Design of beams and columns, floor framing, tension and compression members, riveted and welded connections, and plate girders according to AISC specifications.

CET 413. WOOD STRUCTURAL TECHNOLOGY. (3) Prerequisite: CET 311. Design of floors, beams, columns and trusses of both solid and glued laminated wood; includes wood joints and concrete forms.

CET 441. HIGHWAY DESIGN AND CONSTRUCTION. (3) An introduction to highway planning, economic considerations and traffic engineering. Design and construction of modern highways including grade separations and interchanges.

CET 442. PAVEMENT DESIGN. (3) Prerequisite: CET 441. A study of stresses in flexible and rigid pavements, and properties of pavement components. Design of rigid and flexible pavements. A discussion of pavement performance and failures and of pavement strengthening.

CET 444. ASPHALT PAVEMENT MIXTURES. (3) A study of the chemical and physical properties of asphalts, classification and properties of mineral aggregates, significant properties of asphalt paving mixtures, design of hot-mix asphaltic concrete, asphalt pavement performance and reconstruction of old asphaltic pavements.

CET 451. PHOTOGRAMMETRY. (1) Prerequisite: course in elementary surveying and CSC 100. An outline of the fundamental principles of photogrammetry and photogrammetric procedures used in engineering practice. Students learn how to use modern photogrammetric equipment.

CET 452. ENVIRONMENTAL LABORATORY. (1) Prerequisite or corequisite: CET 462. A laboratory designed to familiarize the student with the analysis of water and sewage and with problems related to environmental control.

CET 453. CONSTRUCTION ENGINEERING TECHNOLOGY FIELD LABORATORY. (1) Prerequisite: senior standing. A synthesis of prior work, using fundamental principles as applied in a directed project. Three laboratory hours per week.

CET 462. INTRODUCTION TO ENVIRONMENTAL ENGINEERING. (3) Prerequisite: CET 332. The study of water supply, treatment and distribution and of liquid-waste disposal systems.

CET 464. INTRODUCTION TO URBAN ENGINEERING. (3) The study of city planning, including street layout and lighting and the design of water, sewerage, storm drain, and solid-waste collection and disposal systems. Street maintenance and traffic analysis; air pollution control.

CET 466. INTRODUCTION TO AIR POLLUTION CONTROL TECHNOLOGY. (3) Prerequisite: consent of instructor. The study of the sources of air pollution, air quality and emission standards, monitoring of air quality and the control of air pollution.

CET 467. INTRODUCTORY PUBLIC HEALTH ENGINEERING TECHNOLOGY. (3) Prerequisite: consent of instructor. A study of the public health engineering in rural, urban and industrial centers with emphasis on water, housing, heating, cooling, ventilation, noise, milk, food, insects and rodents, monitoring and control.

CET 472. LAND SURVEYING. (3) Prerequisite: basic course in surveying. A study of the advanced principles and practice of land surveying. The study will prepare the student for the National Council of Engineering Examiners Land Surveyors examination and the State examination for Land Surveyors.

CET 473. CONTROL SURVEYING. (3) Prerequisite: basic course in surveying. A study of the theory, equipment and data reduction of electronic distance measurements; control specifications, methods and problems in obtaining large area angular measurements; precise leveling; triangulation with introduction to least square techniques.

CET 481. COST ESTIMATING I. (3) This course provides the student with the understanding of characteristics and methods in the application of construction materials. The study develops the methods and procedures for preparing quantity surveys.

CET 482. COST ESTIMATING II. (3) Prerequisite: CET 481. This course provides the student with estimating techniques applied to project work. Topics include sub-contractors, plant and overhead, profit, bidding, etc.

Electrical Engineering Technology

EET 311. ANALYSIS OF LINEAR NETWORKS. (3) Prerequisite: ET 371. Review of complex numbers and phasor notation. Steady state analysis of electrical networks using Kirchoff's laws; applications of various network theorems; magnetically coupled circuits; three-phase circuits.

EET 312. SEMICONDUCTORS. (3) Prerequisite or corequisite: EET 311 and EET 381. A study of the atomic structure and physical properties of semiconductor materials followed by a study of specific devices, such as unijunctions, field-effect transistors. Applications of these devices in specific circuits.

EET 351. ELECTROMECHANICAL TECHNOLOGY LABORATORY. (1) Prerequisite or corequisite: EET 381. Experiments illustrating basic motor/generator characteristics, the principles of operation and applications of feedback control systems, and the design of relay combinational switching circuits. Emphasis is placed on the writing and preparation of technical reports. Three laboratory hours per week.

EET 352. SEMICONDUCTORS AND CIRCUITS TECHNOLOGY LABORATORY. (1) Prerequisite: EET 351. Prerequisite or corequisite: EET 311, EET 312 and EET 381. Experiments illustrate (1) the characteristics of transistors and other semiconductor devices and methods of measuring various transistor parameters; (2) the characteristics of several types of electrical networks, especially lead/lag networks, and also the determination of gain/phase characteristics (Bode plots) of amplifiers; and (3) the design of combinational switching networks and their implementation with discrete components. Three laboratory hours per week.

EET 381. INTRODUCTION TO SWITCHING NETWORKS. (3) An introduction to Boolean algebra. Disjunctive and conjunctive canonical forms. Applications to the analysis and design of combinational switching circuits utilizing both relays and semiconductors. Minimization of switching functions. Design of multiple-output networks.

EET 382. LOGICAL DESIGN OF SEQUENTIAL CIRCUITS. (3) Prerequisite: EET 381. The description and classification of sequential switching circuits; the operation of the principal types of flip-flops. The analysis and design of pulse-mode and fundamental-mode sequential circuits including state-table reduction procedures.

EET 385. MINICOMPUTER PROGRAMMING. (3) Prerequisites: EET 381 and CSC 100. The major emphasis is placed on the principles of assembly-language programming of digital computers. Students learn to

program a small-scale computer, to operate it and to run the programs which they write. The basic principles of operation of a digital computer are covered, especially as to how the computer responds internally to different elements in the program.

EET 411. TECHNOLOGY OF ACTIVE NETWORKS. (3) Prerequisites: EET 311 and EET 312. Prerequisite or corequisite: ET 471. A study of the black box approach to the analysis of amplifiers in general, junction transistors, small signal models, field effect transistors, feedback principles and applications, and pulse circuits.

EET 412. DIGITAL ELECTRONICS. (3) Prerequisites: EET 382 and EET 411. The analysis and design of pulse circuits using discrete components and the analysis of various forms of digital integrated circuits, including RTL, DTL, TTL, ECL and MOS logic. Other areas studied include the transmission of digital signals, power supply bussing, and decoupling, crosstalk and system noise.

EET 451. COMPUTER TECHNOLOGY LABORATORY. (1) Prerequisites: EET 452 and EET 481. Prerequisite or corequisite: EET 412. Students learn to communicate with a digital computer by means of a teletype terminal. They learn to operate an analog computer and to use it for solving certain types of differential equations. Experiments also illustrate the characteristics and applications of operational amplifiers, A/D converters, and D/A converters; interfacing the digital computer with analog devices; and displaying of information. Three laboratory hours per week.

EET 452. INTEGRATED CIRCUITS AND DIGITAL ELECTRONICS TECHNOLOGY LABORATORY. (1) Prerequisite: EET 351, EET 312 and EET 382. Experiments illustrating the characteristics of various types of digital integrated circuits and the design and implementation of sequential switching networks using integrated circuits. Three laboratory hours per week.

EET 461. INDUSTRIAL INSTRUMENTATION. (3) Prerequisites: EET 311 or consent of instructor. A review of the basic physical principles that apply to the design of sensors and transducers, followed by a study of pneumatic and electrical measuring instruments and transducers. Emphasis is on the different methods available for measuring such quantities as pressure, temperature and flow rate, and on the selection of the best method for typical applications that exist in the process industries.

EET 481. COMPUTER DESIGN. (3) Prerequisites: EET 382. Prerequisite or corequisite: EET 385. The function and operation of the various elements that comprise a digital computer; methods for performing arithmetic operations; types and operation of memories; operation of I/O equipment; machine codes and communication with the computer.

EET 483. MODULATION AND TRANSMISSION. (3) Prerequisite: ET 471. Prerequisite or corequisite: EET 411. An introduction to

Fourier series. Frequency analysis of signals,; amplitude, phase and pulse modulation methods.

EET 484. DESIGN OF REAL-TIME SYSTEMS. (3) Prerequisites: ET 371 or MATH 120 and EET 385 or CSC 201. An introduction to the nature, characteristics and applications of real-time computer systems. Basic probability theory and a brief introduction to queuing theory. The principal factors and techniques involved in the design of large-scale, real-time data-processing systems.

EET 486. MICROCOMPUTER APPLICATIONS. (3) Prerequisite: EET 481. Two (2) lecture hours and three (3) laboratory hours each week. A thorough study of the organization, capabilities and techniques of utilization of the Intel MCS-4 microcomputer set. Laboratory design projects will give the student the opportunity to design the soft-ware and the hardware interface for one or more typical applications of the MCS-4 microcomputer set.

Mechanical Engineering Technology

MET 311. KINEMATICS. (3) Prerequisite or corequisite: ET 371. The study of the relative motions of mechanisms of machines. Displacement velocity and acceleration relationships of elements of a mechanism as applied to mechanical power transmitting equipment.

MET 312. DYNAMICS. (3) Prerequisite: differential and integral calculus. The dynamic behavior of machine elements, translation and rotation of a rigid body, the principles of conservation of energy and momentum.

MET 322. STRENGTH OF MATERIALS. (3) Prerequisite or corequisite: ET 371. A course designed to extend the student's knowledge of basic strength of materials with emphasis on applications to engineering problems. Included are the stress-strain relationships resulting from direct loads, torsional loads and bending loads, and also the results obtained from applying more than one of these loads simultaneously. Beam deflection and column loading.

MET 331. FLUID MECHANICS. (3) A study of the fundamental principles of fluid mechanics. Topics covered include manometry, buoyancy, forces on submerged bodies, Bernoulli's equation with applications, orifices, pipe losses and an introduction to hydrodynamics.

MET 341. THERMODYNAMICS. (3) Prerequisites: ET 371 and CHEM 101. The perfect gas law; the first and second laws of thermodynamics and their application to power and refrigeration cycles. Gasses and mixtures of gasses, especially air and water vapor. Introduction to heat transfer with applications.

MET 351. FLUID MECHANICS LABORATORY. (1) Prerequisite or corequisite: MET 331. Laboratory experiments relating to flow through conduits, the experimental determination of fluid properties, and the behavior of fluids in static and dynamic equilibrium.

MET 352. STRESS ANALYSIS LABORATORY. (1) Prerequisite or corequisite MET 322. Experiments illustrating stress-strain relationships in engineering materials and the use of brittle coating, photoelasticity, and electrical-resistance strain gauges.

MET 411. MACHINE DESIGN I. (3) Prerequisites: MET 312 and MET 322. The first part of a two-semester course designed to apply previously acquired skills, along with newly attained ones, toward the design and analysis of machine components.

MET 412. MACHINE DESIGN II. (3) Prerequisite: MET 411. A continuation of MET 411 with emphasis on new methods of problem solving and opportunities to integrate previously attained skills and knowledge into the design and optimization of machine system.

MET 441. AIR CONDITIONING. (3) Prerequisite: MET 341. A study of the principles of heating and air conditioning, including calculation of heat loss and heat gain for buildings, heat and cooling systems, psychrometric principles, air distribution, refrigeration and related automatic control apparatus.

MET 442. DESIGN OF MECHANICAL SYSTEMS FOR BUILDING. (3) Prerequisite: MET 331 and MET 341. The study of heating and air conditioning design involving chilled water and hot water piping, including pump sizing; water and sanitary system design; and sprinkler system design. The course will also include a study of the National Fire Code and the National Plumbing Code.

MET 452. INSTRUMENTATION LABORATORY. (1) Prerequisite or corequisite: MET 462. A laboratory designed to give students practice in the use of the various instrumentation devices studied in MET 462.

MET 453. THERMODYNAMICS AND HEAT TRANSFER LABORATORY. (1) Prerequisite or corequisite: MET 341. Design projects and experimentation involving the fundamental principles of thermodynamics and heat transfer. Three laboratory hours per week.

MET 462. INSTRUMENTATION. (3) This course is intended for students having no background in electronics or electric circuits. Basic D.C. circuit theory, including Kirchoff's laws, is covered first, since the primary emphasis of the course is on electrical and electronic instruments. The nature and analysis of errors in measurements is also covered, followed by the theory of operation, selection criteria and application of the major types of electronic instrumentation.

MET 472. INDUSTRIAL CONTROLS. (3) Prerequisite: ET 471. An introduction to the theory of closed-loop control systems with emphasis on servomechanisms; a study of various types of process control systems used in industry including detailed treatment of numerical control systems.

MET 481. HEATING, VENTILATING, AIR CONDITIONING, PLUMBING, AND ELECTRICAL CONSTRUCTION SYSTEMS TECHNOLOGY. (3) Basic theory and practical application of heating, ventilating, air conditioning, plumbing, and electrical systems construction. Credit toward degree requirements only for students in the Construction Engineering Technology option.

College of Human Development and Learning

Dean: Professor Chase
Distinguished Professor: Powers
Professors: Britt, Dickey, Hackney
Associate Professors: Bransky, Burke, McLeod, Mork, Pleasants, Roberts, Smith
Assistant Professors: Antonelli, Armstrong, Kochendofer, Lueder Mankinen, Rippy, Romine, Rowland, Sadoff, Whaley
Instructors: Bambach, Baptiste, Bird, Carter, Gwaltney, Hammond, Hendrix, Holland, Irons, Leopard, Parker, Parrish, Sapp
Lecturers: Adkins, Duffy, Heningburg, Howard, Hoyle, Jeffers, Lewis, Maher

Human development and learning at the University of North Carolina at Charlotte is conceived as a cooperative enterprise of the entire faculty. The preparation of teachers is one of the important functions of this University.

Program design is directed toward the development of human potential. Emphasis is given to the development and analysis of experiences which liberate, freeing the capacity to learn; the teacher/learner relationship; factors of meaning, values, and self-concepts which cause behavior; experiences which provide opportunities for person-to-person relationships; and to experiences in various school-community settings which provide opportunities for the development of competencies necessary for self-analysis, value judgments, choices, evaluation and behavioral change.

The development of programs of study and activities of the College of Human Development and Learning as translated into person-to-person relationships, teacher/learner relationships, and services to the University and society in accord with the stated rationale, represents commitment to beliefs that professional experiences designed for teachers and other personnel for the helping professions should give priority to:

1. The cognitive and affective understanding of human potentialities and the release of human potential in relationship to the complex factors which relate to continuous growth and development of personhood;

2. The processes, programs and experiences which insure that the teacher and other personnel in the helping professions are liberally educated and possess some intellectual depth and competencies in selected teaching fields and related disciplines;

3. The identification of one's beliefs, prejudices, elements of relationships and behavior;

4. The analysis of teaching-learning and other helping relationships which identify values, meaning and the self-concept causing behavior.

5. The facilitation of moral judgment through the establishment of personhood as a fully-functioning self in a relationship ever mindful of man;

6. The expansion of the field of awareness to the end that a more nearly complete complex of multidimensional relationships may be established between the learner, his perceptions, his behavior, the structures of knowledge and the reification of theory into practice;

7. The facilitation of the integration of knowledge to promote the expansion of perception and the relationship of ideas to elements of the present, the future and the past;

8. The facilitation of experiences which provide involvement in the development of competencies necessary to self-analysis, value judgments and choices, evaluation and behavioral change through clinical learning and the use of multiforces in the solution of problems.

With commitment to the above beliefs, the profesional sequence for undergraduate studies in the College of Human Development and Learning is presented as phases which may be conceptualized as an evolving continuous spiral, as a series of experiences, integrating Exploration, Involvement, Commitment and Universality. Therefore, all courses, seminars and clinical experiences are organized around these four phases.

Phase I: Explorations in Human Potential

The first phase of the integrated program of professional study focuses upon Man, his nature, potential and worth. Emphasis is given to life patterns, creative potential, social forces and human potential and to the image of man as becoming. During this phase, studies will focus upon the person in urban society, the facilitation of meaning and upon those factors and conditons which facilitate or hinder the growth of human potential. The student will mainly be concerned with an analysis of his beliefs, values and his personal relationships in relation to a growth environment. Opportunities are provided for the student to be engaged in clinical experiences that will promote understanding of the sociological, psychological and philosophical foundations on which educational experiences are selected and organized.

Phase II: Meaning and Growth in Teacher/Learner Relationships

Phase II in the integrated program of professional study seeks to extend and deepen the interest and understanding explored in Phase I. During this phase, the student will consider particularly the special problems attendant to the release of human potential through participation in a particular interpersonal relationship—that of teacher and learner.

Experiential learning is extremely "open." It calls for choices, selections, self-screening and involvement with self-analysis and team participation. In essence, experiential learning facilitates meaning and is the medium for a growth environment.

In the College of Human Development and Learning, the program of clinical experiences and internships has been designed so that the program of experiential learnings will begin just as early as the program of intellectual analysis and should proceed alongside it, step by step. At every step, the two should be correlated and fused for internalization. Experiences should move naturally into the next step of intellectualization and the next phase of experiences.

Clinical Experiences and Internships

For too long, problems such as that of translating theory into practice have existed within professional education. As an important part of the effort to change this situation, clinical experiences and internships have been made an integral part of all programs of study offered by the College of Human Development and Learning. These experiences are designed to give the student of human development and learning an opportunity to learn by doing, to relate theory to practice and to reality-test contemporary theories and innovations. Such experience thus becomes the center of, and testing ground for, a program of studies designed to meet needs and interests of the individual student.

Clinical experiences are begun in the first course in human development and learning through involvement in such capacities as teacher aide, tutor, playground assistant, library guide, counselor or administrative aide. In each successive course at the undergraduate level, this approach is continued as related appropriate firsthand experiences are designed to complement the student's classroom work. Instruction in the teaching of reading, for example, involves both classroom work and a practicum during which the student teaches reading under the supervision of his instructor. In the senior year, these experiences culminate in the semester of student teaching as the student gradually assumes the total schedule and responsibilities of the supervising teacher with whom he is working.

Urban Education

Through experience-centered programs and activities in human development and learning, efforts are directed toward the study of the complex range of problems facing urban education. The University of North Carolina at Charlotte is uniquely located in a growing and changing urban center. Cooperative planning with the Charlotte-Mecklenburg School System and with public schools in surrounding cities and counties provides unique opportunities for laboratory experiences in the inner-city, the suburban area, the small town and the rural setting: Working with public schools and community agencies , the College of Human Development and Learning provides prospective teachers with opportunities for working with the inner-city child.

Just as important to the University as to other schools is the expertise, value and role of other community agencies in the solution of urban education problems. Through a cooperative endeavor with other agencies, members of the staff and students of Human Development and Learning work in day care centers for inner-city children, in hospitals, in correctional institutions, in agency offices and often provide recreational and educational activities for young people during weekends. Such opportunities provide excellent child study experiences, community and personal involvement and firsthand clinical experiences for students. These efforts, as illustrative of others, provide experiences for students of the University to really, for the first time, see and feel the intensity and complexity of the problems facing urban education.

Teaching/Learning Teams

Program development in the College has been designed to give emphasis to the many aspects of various *explorations in human potential,* to *involvement with people and problems* and to *commitment to personal growth and development.* Activities include tutorial programs, participation in teaching, planning of personalized educational assessment and diagnosis and the development of personalized educational programs for enrichment or remediation after assessment. Within a wide range of related activities involving pupils, teachers, schools and communities, program emphasis for University students, teachers, University staff, and pupils in the inner-city setting has given priority to the development of teams. A teaching/learning team is conceived as an organizational pattern for teaching. This model of organization is designed to capitalize on the creativity, strengths and special abilities of staff and students as learners displaying an interrelatedness of responsibilities. Effects are directed toward a more multidiscipline team approach involving many specialists from the University community and the public domain.

Courses and programs have been designed to provide observational and teaching experiences as a member of a teaching team in early childhood education, intermediate education, secondary education and in other areas of teaching interests. These experiences are directed by a team so as to provide supervision, analysis and planning by specialists in various areas. Emphasis is given to instructional change, program development and to the development of unique teaching styles. All experiences are organized with children in model settings. Public schools have been most cooperative in planning and assisting to the extent that all programs have become jointly sponsored. A wide variety of models and locations are being used.

Admission to the Teacher Education Program

Formal application for admission to Teacher Education Programs should be filed with the College of Human Development and Learning the freshman year. Students must file applications before the first semester of their junior year in order to complete all requirements within the four-year college program. Each student will be assigned to an adviser in the College of Human Development and Learning who will coordinate his program in consultation with the adviser in the major field

of concentration. Advisers in the College will confer with each student concerning long-range planning of the student's program, opportunities in the teaching field and North Carolina certification requirements.

Each student should consult with his adviser in the College of Human Development and Learning at least once each semester to review his progress in the professional sequence, to insure the completion of certification requirements, and to replan for student teaching experience. Failure to do so may delay student teaching and teacher certification.

Students should consult the College of Human Development and Learning for further details. Those interested in graduate study should consult with the College for admission and program planning.

Admission to Student Teaching

Applications for admission to HDL 470A or 470B (Internship) must be filed with the College of Human Development and Learning by April 15 for the following fall semester and October 15 for the following spring semester. For admission to HDL 470A or 470B, candidates must be admitted to the Teacher Education program, have a grade point average of at least 2.5 in course work completed in the teaching content area and in professional education, sound mental and physical health, good speech, the approval of the College and the recommendation of the major department. The quality of scholarship in the teaching area of each candidate shall be at a level above that minimally required for graduation.

Special Students in Teacher Education

The status "special student" in teacher education is applied to (1) students who hold a Bachelor's degree and are working toward a teaching certificate or certificate renewal and (2) visiting students who are taking courses in the teacher education program with the approval of their resident institutions.

Special students must meet the standards set by the University for admission as well as the requirements of the College of Human Development and Learning, which include above average scholastic ability, sound mental and physical health and good speech. The student who has obtained a degree at another institution and wishes to be certified by this institution will be required to take at the University of North Carolina at Charlotte a minimum of two courses in his major area, one course in human development and learning, and student teaching. Under special circumstances, these requirements may be waived. Students should consult with the College of Human Development and Learning for further details.

National Teacher Examination

A candidate for an elementary or secondary school teaching certificate in North Carolina must file evidence that the National Teacher Examination has been taken before a certificate may be issued. Both

common and teaching area examinations must be taken by the applicant. Students should consult with the College of Human Development and Learning for further details.

Teacher Placement

The Placement Office in the Division of Student Affairs, in cooperation with the College of Human Development and Learning, provides placement services for qualified graduates. All students in the Human Development and Learning program are urged to complete their credentials since most school systems request candidates who are applying for positions to submit them. In addition, school administrators may contact the University for prospective candidates who are registered with the Placement Office.

Curriculum Materials Center

Located in the Dalton Tower, the Curriculum Materials Center contains current textbooks and related curriculum materials representing all subject areas and grade levels taught in the public schools. The center receives approximately 60 education and related periodicals. A vertical file containing non-catalogued education materials is an integral part of the center. The library is a government document depository; thus, federal government publications pertaining to education are available.

Psychological Testing Laboratory

The Psychology Department maintains a psychological testing laboratory in which students gain experience in the selection, administration and evaluation of psychological and achievement tests. A library of literature on test instruments for student use is kept current.

Learning Resources Center

As part of the College of Human Development and Learning, the Learning Resources Center provides all students laboratory experiences in teaching learning resources. The latest audiovisual equipment and teaching media will be available for individual student familiarization. Instruction in the use, preparation and evaluation of teaching media as a functional aspect of teaching will be included.

Undergraduate Programs

Undergraduate programs in teacher education are coordinated with programs of study in a major field of concentration. Approved programs are offered in Early Childhood Education, Intermediate Education, and in Secondary Education. In addition, approved programs in the special areas of art and music at the K-12 level are offered through the Creative Arts Department of the College of Humanities and the College of Human Development and Learning. Students interested in certification in these areas must major in the BCA program.

Programs as outlined below meet the certification requirements of the North Carolina State Board of Education and the requirements of most other states. Students who plan to teach outside North Carolina are strongly urged to check certification requirements with the College of Human Development and Learning before the end of the sophomore year so that programs may be planned appropriately.

The programs of undergraduate study are organized into three areas:

I. General Requirements for Teacher Education

		Semester Hours
	English 101 English 102 Literature	6
Humanities	Creative Arts, History, English Philosophy, Religious Studies and Foreign Language (see a, b)	6
Mathematics	Mathematics 101 and 120 **or** Mathematics 103 and 104, **or** Mathematics 130 and 131 (see a, c, d)	6
Natural Science	Psychology 101 Physical Science Biological Science	12
Social Science	History 101 or 102 and any three semester hours of 100-level history courses. Students are encouraged to take courses in African, Asian, and Latin American history. One course in at least two of the following: Anthropology, Economics, Geography, Political Science, Sociology	12
Health and Physical Education	Health Education 300	3
	Physical Education Activity (Secondary)	1
	Physical Education 300 (K-3 and Intermediate)	3
	Speech Competency	0
	Total	50-53

Notes

a. If six hours of foreign language are used to meet the humanities requirement, only one course in mathematics is required. Early childhood and intermediate teacher candidates must complete six hours of creative arts in the areas of art and music.

b. Philosophy and religious studies may only be used to meet three hours of the requirement.

c. A course in logic may be substituted for one course in mathematics.

d. Elementary teacher candidate will take Mathematics 130 and Mathematics 131.

The general degree requirements are presented as specific subject matter disciplines, but this does not preclude the meeting of the requirements through integrated courses. Adaptation to individual needs will be made by the College of Human Development and Learning. The above represents a minimum degree program in general education in accordance with the *Standards and Guidelines for the Approval of Institutions and Programs for Teacher Education,* North Carolina State Board of Education.

II. Professional Sequence

Elementary
(Early Childhood and Intermediate)

Freshman or Sophomore Year		Semester Hours
HDL 250.	Processes of Growing I: Explorations in Human Potential	3
PSY 202.	Educational Psychology	3
Sophomore or Junior Year		
HDL 400A.	Communication Skills and Processes	2
HDL 400B.	Cultural and Scientific Impact	2
HDL 400D.	Living/Learning Environments	2
Senior Year		
HDL 400C.	Living/Learning Styles	2
HDL 420A.	Early and Middle Years	2
HDL 420D.	The Middle Years	2
HDL 470A (B).	Internship	9

Secondary

Freshman or Sophomore		*Semester Hours*
HDL 250.	Introductory Explorations in Human Potential	3
PSY 202.	Educational Psychology	3

Senior Year

HDL 400B.	Cultural and Scientific Impact	2
HDL 400D.	Living/Learning Environments	2
HDL 420B.	Adolescence and Aging	2
HDL 470A (B).	Internship	9
		21

III. Major Teaching Fields

Candidates who plan to teach in elementary school will fulfill the following requirements:

(1) All required courses for graduation.

(2) A major in one of the academic fields. Elementary candidates majoring in Psychology must, in addition, have 18 hours in an academic discipline normally taught in elementary school.

(3) Subject-matter requirements for teacher certification listed below:

	Semester Hours
Creative Arts	6
English 303	3
Earth Science 101 and Geography 102 or 303	7
Health Education 300	3
History 103 or 104 and three semester hours of any 100-level history course. Students are encouraged to take courses in Asian, African, or Latin American history	6
Political Science 110	3

Secondary

Candidates who plan to teach in secondary school will fulfill the following requirements:

(1) All required courses for graduation.

(2) A major in the academic field in which they plan to teach.

(3) Related work approved by the major department.

(4) Subject-matter requirements for teacher certification in selected field(s) as listed below:

Semester Hours

English 36
- Language 12
  (Grammar, composition, rhetoric, history and analysis of the English language, etc.)
- Literature 12
  (English and American Literature)
- Language and Literature Skills 6
  (Reading, interpretation of literature, oral and written exposition, the library, and journalistic writing)
- Electives from above areas 6

Mathematics 30
- Calculus and Analytic Geometry 9
- Algebra 6
- Geometry 3
- Electives in Mathematics 12
  (The algebra shall consist of one course in modern abstract algebra and one in linear algebra.)

Modern Foreign Language 30
- Grammar, Composition, and Phonetics 9
- Literature 9
- Language Skills 6
  (Understanding, speaking, reading, and writing)
- Literature, History, and Civilization of the country being studied 6
  (The 30-hour requirement in a language assumes that one has had two or more high school units in that language when entering college.)

Science 48
- (1) Common Foundations 24
  - Mathematics 6
  - Six semester hours each from three of the following: 18
    - Biology
    - Chemistry
    - Physics
    - Earth Science
- (2) A concentration in one area 20
  - Biology
  - Chemistry
  - Physics
  - Earth Science
- (3) Electives 4

Certification in the individual science areas should give depth sufficient to assure reasonable competence as a teacher in the subject of concentration. A program for certification in a particular area (biology, chemistry, physics or earth science) should comprise approximately 20 percent of a teacher's undergraduate curriculum (24 semester hours).

Social Science 42
(1) History—American and world 21
(2) From three or more of the following 21
(There should be about equal emphasis on all areas chosen.)
Anthropology
Economics
Geography
Political Science
Sociology
A program for certification in individual areas (anthropology, economics, geography, history, political science or sociology) should comprise approximately 20 percent of a teacher's undergraduate curriculum (24 sem hours).
History 30
Certification in history (secondary school teaching) is made possible by satisfactory completion of a major.

COURSE DESCRIPTIONS

HUMAN DEVELOPMENT AND LEARNING

Processes of Growing Seminars

HDL 250. PROCESSES OF GROWING I: EXPLORATIONS OF HUMAN POTENTIAL. (3) An introduction to the study of human development designed to allow the individual to look closely at himself and his relationship to others with whom he interacts. Includes clinical experiences which are interrelated with other aspects of the total program to provide opportunities to work with others in a helping relationship as a source of data from which to explore aspects of human potential. Emphasis will be placed on self-evaluation and upon the development of a program of studies tailored to aid the individual in reaching his personal and professional goals. Areas of investigation shall give emphasis to the nature of human potential; the processes of meaning, valuing and choosing in relation to human interaction, and to an analysis of barriers and/or facilitators to the release of human potential.

HDL 350. PROCESSES OF GROWING: TEACHING/LEARNING TEAM.
A. Processes of Growing II (0)
B. Processes of Growing III (0)
C. Process of Growing IV(0)
D. Process of Growing V (0)
Seminars designed to continue the relating and integrating functions begun in Processes of Growing I. As a function of these seminars, clinical experiences will be planned and carried out to contribute to classwork in other seminars in which the student is enrolled. Semester by semester these seminars will serve as a "home base" for the students. They will also provide a planned clinical component to complement and integrate the content of Seminars on The Person and of the various areas of the Helping Specialties in relation to competencies being identified and developed. Taken concurrently with any course(s) numbered 400 and 420.

HDL 470. PROCESSES OF GROWING: INTERNSHIP, INTEGRATION, AND SYNTHESIS.

A. Processes of Growing VI—Internship (9)

B. Processes of Growing VII—Internship (9)

C. Processes of Growing VIII—Integration and Synthesis (2)

These seminars are designed to provide the student with an opportunity to pursue an individually planned program of experiential learning activities in the areas of his particular interest and academic concentration, to promote the growth and development of others under the supervision and coordination of University faculty members. Processes of Growing VI, VII and VIII are designed as culminating and synthesizing functions. The seminars, offered during the student's last three semesters, are intended to integrate the student into greater roles of responsibility involving action, research and demonstration of developed competencies. The seminars require prior planning by the student or teams of students for the development of a program of study, research and demonstration projects of experiential learning in relation to the helping processes and the chosen areas of the helping specialty. A final seminar, to include a seminar report and a portfolio of the total experience, is required. The process brings the student into greater roles of responsibility, not only with people outside the University community, but also within the Process of Growing team itself. The student and his adviser plan during the fifth semester of study for Processes of Growing Seminars VI, VII and VIII. Within the typical program, the student should register for Processes of Growing VI and VII during the sixth and seventh semesters of study. Processes of Growing VII is undertaken during the final or eighth semester, during which time the student engages in the processes and functions of synthesis, theory refinement and evaluation in relation to both the *Helping Processes* and the *Helping Specialties*.

HDL 400. SEMINARS ON THE PERSON: PROBLEM—PROCESS

A. Communication Skill and Processes. (2) This seminar focuses on developing greater awareness within each participant of how he conveys his ideas to others and how he interprets the variety of verbal and nonverbal expression from others. In the belief that most ideas are transmitted non-verbally, the seminar members will interpret facial expression and body movement as one major function of human languaging. The verbal components of communication include dialectic and cultural influences on language as well as developing listening skills for qualities in speech such as tonality, resonance, sentence patterns, word selection and silence. The purpose of the seminar is to help each participant to understand both the sending and the receiving of human communication with greater meaning through interpreting the components of languaging within the context of the total communication effect.

B. Cultural and Scientific Impact. (2) Designed to help the student become aware of the interrelationship between the areas of the arts, sciences, humanities and the social studies particularly as they relate to an understanding of human potential. Serves to encourage an integration of principles from the various disciplines with a focus on how they relate to living/learning. Emphasis is given to areas of investigation as structures of knowledge, interdisciplinary principles and concepts, ways of generating knowledge, technology and change and "future shock."

C. Living/Learning Styles (2) Designed to provide the student with an opportunity to investigate the relationship between cognitive, affective and psych-motor development as they relate to living style. Emphasis is on the process of learning in each of the three areas in relation to intellectual growth, the valuing process, the individual and exceptionality, and to multiple directional interaction and learning.

D. Living/Learning Environments (2) Designed to provide the student with an opportunity to be involved in decision-making and decision-executing experiences which focus on the interrelationship of Living/Learning Styles and the environment in which the individual finds himself. Emphasis is given to areas of investigation such as the scope of the environment, designs and models, alternative systems, learning centers, and resources.

E. Developmental Exceptionality (2) Designed to survey the field of human exceptionality. Emphasis is on both the exceptionally talented and the individual with developmental disabilities.

HDL 420. SEMINARS ON THE PERSON: CYCLES OF GROWTH

A. Early and Middle Years (2)
B. Adolescence and Aging (2)
C. The Infant and Early Years (2)
D. The Middle Years (2)
E. The Adolescent (2)
F. The Young Adult (2)
G. The Adult Years (2)
Seminars to provide the student with a growing awareness of total growth and development as the cycles of growth of man are studied from the earliest days of infancy to the culmination of life in old age and death. Emphasis is given to biological and cultural inheritance, growth patterns, socialization, growth crises, life styles, identity and roles, and to methods of in-depth study in relation to learning and growth environments.

The Helping Relationship

HDL 463. GUIDANCE: BEHAVIOR AND GROWTH. (3) An introduction to the study of guidance in the context of the helping relationship. Emphasis is given to the development of understandings, approaches and techniques for helping others make decisions directed

toward the solution of problems and the facilitation for self-understanding and growth. Open to students not seeking teacher certification.

Courses for Advanced Undergraduates

HDL 570. SELECTED TOPICS IN HUMAN DEVELOPMENT AND LEARNING. (3-6) Prerequisite: HDL 250 and permission of the College of Human Development and Learning. Topics and special problems chosen in relation to human learning, ideas, practices, significant movements or detailed study of models for human learning. Seminars, independent study and clinical experiences. May be repeated for credit, with approval.

Library Science

L.S. 520. ORGANIZATION AND ADMINISTRATION OF THE SCHOOL MEDIA CENTER. (3) Acquisition, processing, circulation of materials; student assistant; records and reports; attendance. and scheduling; library quarters and equipment; professional relationships evaluation of library services.

L.S. 522. BASIC REFERENCE SOURCES AND MATERIALS. (3) The selection, evaluation and use of basic reference materials.

L.S. 524. READING GUIDANCE AND THE SELECTION OF BOOKS AND MATERIALS FOR CHILDREN. (3) A survey of the development of children's literature, with study of aids and criteria for selection of books and other materials; principles and objectives of reading guidance for the kindergarten and elementary school pupil.

L.S. 526. READING GUIDANCE AND THE SELECTION OF BOOKS AND RELATED MATERIAL FOR YOUNG PEOPLE. (3) A survey of library materials and principles and objectives of reading guidance appropriate for the junior high and high school student, with study of aids and criteria for their selection.

L.S. 528. NON—BOOK MATERIALS. (3) A study of the principles and techniques for the selection, acquisition, organization, circulation and use of non-book materials in the library program.

DEPARTMENT OF HEALTH AND PHYSICAL EDUCATION

Chairman: Associate Professor Murphy
Associate Professors: Bostian, Tillotson
Assistant Professors: Avant, Dawson, Healey
Instructors: Bass, Hastings, Kerr, Pratt, Rose

COURSE DESCRIPTIONS

HEALTH EDUCATION

HED 800. FUNCTIONAL HEALTH DYNAMICS. (3) The dynamics of the science and teaching of functional health. Three lecture-laboratory hours each week.

PHYSICAL EDUCATION

PED 101. FOUNDATIONS OF PHYSICAL CONDITIONING. (1) The application of various physical training programs designed to improve and maintain physical fitness. One-sixth of the meetings will be devoted to lectures on physiological and psychological aspects of physical training. Three one-hour meetings a week.

PED 102. WEIGHT TRAINING. (1) The basic mechanics of weight training. Emphasis on anatomy, tests and measurements, individual strength development and isometric training. Three laboratory hours each week.

PED 103. FENCING. (1) The skills and rules of the sport of fencing. Three hours each week.

PED 106. ADAPTIVE AND DEVELOPMENTAL PHYSICAL EDUCATION. (1) Prerequisite: permission of the instructor. Prescribed ameliorative exercises adapted to individual needs, capacities and interests. Primarily designed for the individual with anatomical and functional defects.

PED 110. BEGINNING SWIMMING. (1) Designed to teach weak or nonswimmers a basic stroke and safe entry into and exit from the water. Three laboratory hours each week.

PED 111. INTERMEDIATE SWIMMING. (1) Prerequisite: PED 110 or permission of instructor. Emphasis on gaining competency in at least four basic strokes and two dives. Three laboratory hours each week.

PED 115. WATER SPORTS. (1) Rules and skills of water polo and water basketball. Three laboratory hours each week.

PED 120. BEGINNING TENNIS. (1) The rules, history, basic skills and basic strategy. Three laboratory hours each week.

PED 123. BEGINNING BADMINTON. (1) The rules, history, basic skills and basic strategy. Three laboratory hours each week.

PED 125. BEGINNING HANDBALL. (1) The rules, history, basic skills and basic strategy. Three laboratory hours each week.

PED 140. BEGINNING GOLF. (1) The grip, stance, stroke, use and selection of clubs, history, rules and etiquette. Three laboratory hours each week.

PED 142. ARCHERY. (1) The fundamental skills and selection, care and repair of equipment. Three laboratory hours each week.

PED 150. VOLLEYBALL. (1) The rules, history, etiquette, correct method of serving, passing, setting-up, spiking and blocking the ball, offensive and defensive team play and officiating are emphasized. Three laboratory hours each week.

PED 160. GYMNASTICS. (1) Single and combinations of stunts on the side horse, horizontal bar, parallel bars, uneven parallel bars, still rings, balance beam, trampoline and tumbling mats are taught. Emphasis is placed on fundamentals so the student can exercise creativity in constructing routines. Three laboratory hours each week.

PED 212. ADVANCED LIFE SAVING. (2) Prerequisite: PED 111 or instructor's permission. The science and skills associated with lifesaving. The course qualifies the student for the American Red Cross Senior Lifesaving Certificate. One hour lecture and two hours laboratory each week.

PED 213. WATER SAFETY INSTRUCTION. (3) Successful completion of PED 212 or current American Red Cross Advanced Life Saving Certification. The study of the techniques used in teaching people aquatic skills. Emphasis is placed on beginning swimming, swimming stroke technique and lifesaving techniques. Qualifies the student for the American Red Cross Water Safety Instructor's rating. Two hours lecture, two hours laboratory each week.

PED 219. SCUBA DIVING. (3) Prerequisite: current American Red Cross Advanced Lifesaving Card or equivalent. Advanced swimming skills including: breast stroke, American crawl stroke, side stroke, swim under water 25 yards, swim continuously for 20 min., tread water 10 min., tread water with hands out of water 5 min., and swim 50 yards with 10 lb. weight belt, or instructor's permission. The science and skills associated with the use of self-contained underwater breathing apparatus. The course qualifies the student for the National Association of Underwater Instructor's (NAUI) basic SCUBA Diving Certification. Equipment furnished except wet suits. Two hours lecture, two hours laboratory each week and two open water diving field trips.

PED 409. PHYSICAL EDUCATION LABORATORY. Physical education instruction, principles of physical education teaching for the elementary grades.

PED 506. MOVEMENT THERAPIES FOR DEVELOPMENTAL EXCEPTIONALITIES. (3) A study of theories, principles, programs and research in movement therapy. Designed to aid the student in evaluation of the learner for the selection and implementation of appropriate movement therapy.

College of Humanities

Dean: Professor Mathis

The College of Humanities includes the areas of American Studies and Black Studies and the Departments of Creative Arts, English, Foreign Languages, History, Philosophy and Religious Studies.

AMERICAN STUDIES

Coordinator: Professor Mason

The American Studies emphasis is intended to allow a student to focus strongly on various aspects of the culture of the United States while also gaining further variety of background from other facets of the University's curriculum. It is hoped that through this concentration he will gain insight into the interrelatedness of various aspects of American life, both past and present. (Students intending to teach in junior or senior high school should also find such an interdisciplinary emphasis to be very advantageous.)

A student desiring an emphasis in American Studies will major in English or History (following the basic pattern of one of those majors) and will take 27 hours in courses allowed toward the American Studies emphasis. In most instances there will be some overlapping of the requirements for the degree proper and for the American Studies emphasis.* All American Studies students will take American Studies 301, Introduction to American Studies, no later than the junior year, sooner if possible. Also, each is to take at least three hours of American Studies 303 after taking 301.

Following are examples of possible distribution of courses in a minimum American Studies emphasis. If one presumes only courses with academic credit of three hours each, the student would have to take

* In the department of the student's major, 12 of the 27 hours for the American Studies emphasis also will be accepted as part of the courses in the subject of the major which are required for the department's degree if the student wishes to so apply all or part of 12 of the 27 hours of the emphasis; and the department may accept more than 12 hours for its requirements for the major if it finds it appropriate to do so. The other courses of the 27 hours will be applied, as appropriate, to other University requirements for the degree. In the American Studies emphasis, a maximum of 15 hours and a minimum of nine hours of courses in the department of the major are to be applied toward the 27 hours required for the emphasis. For example, an English major also acquiring an American Studies emphasis is assured that at least four of the nine courses for the emphasis can be counted toward the hours in English required for the major. The other five courses will be applied to other parts of the degree requirements. On the other hand, at least three and no more than five of his nine American Studies courses are to be in English. (This example presumes courses with academic credit of three hours each.) This arrangement allows an encourages the student to go in two directions at once (one traditional and one focused interdisciplinary), both within the time usually spent as an undergraduate.

nine courses for the emphasis. Those nine courses (27 hours) would be divided in one of these three ways:

1. *Three courses in major department,* and *six courses outside major department* (including:
   American Studies 301 (required)
   American Studies 303 (required)
   Four other approved courses outside major department)

2. *Four courses in major department,* and *five courses outside major department* (including:
   American Studies 301 (required)
   American Studies 303 (required)
   Three other approved courses outside major department)

3. *Five courses in major department,* and *four courses outside major department* (including:
   American Studies 301 (required)
   American Studies 303 (required)
   Two other approved courses outside major department).

(In each of the above examples the student is allowed by his major department to credit at least 12 hours toward the major courses for his degree if he so wishes, and in the last example, 15 hours can be so credited.)

To meet the requirements for the emphasis, a student also must have at least a 2.0 average on the courses taken at UNCC which are offered for the emphasis. Students in this program will be advised by that person in the department of the major designated to advise American Studies students. Variety of experience is encouraged. American Studies students are also encouraged to take parallel courses during the same semester when possible (e.g., Southern history and Southern literature during the same semester). The degree will be in English (American Studies) or History (American Studies) and will be so indicated on the student's transcript.

COURSE DESCRIPTIONS

AMERICAN STUDIES 301. INTRODUCTION TO AMERICAN STUDIES. (3) To be taken by all students taking an emphasis in American Studies. Should be taken by them no later than the junior year and sooner if possible. An introduction to the rationale of American Studies and an application of it to a small span of American chronology to reveal the interrelationships of as many facets of American culture as possible. For example, the student might be helped to see the interrelatedness of such things as philosophy, religion, literature, music, politics, science, business and industry, art, etc., in the United States during a single decade, the significance of that interrelatedness, and how to apply for himself the same approach to other periods. (Not limited to American Studies students. Can be counted as a humanities course for general degree requirements.)

AMERICAN STUDIES 303. INDEPENDENT STUDY OR DIRECTED READING IN AMERICAN STUDIES. (3) May be repeated once for credit, with permission of the student's adviser. (Not limited to American Studies students but should be under the supervision of an American Studies adviser or someone designated by him. Can be counted as a humanities course for general degree requirements.)

AMERICAN STUDIES 350. TOPICS IN AMERICAN STUDIES. (3) To be offered from time to time to supplement courses already available, to offer an American focus not available elsewhere in the University, or to provide cross-disciplinary courses with an American focus. For example, courses on American literature and art, American philosophy and politics, etc., might be made available as their being offered is deemed appropriate. May be repeated for credit with permission of the student's adviser. (Not limited to American Studies students. Can be counted as a humanities course for general degree requirements.)

The following additional courses have been approved for the American Studies emphasis. However, appropriate deletions or additions may be made from time to time. The American Studies advisers will have up-to-date lists. Also, consideration will be given to approval of other courses of special interest to the student, especially topics courses or individual study, if pertinent to American Studies.

(*Courses with an asterisk are especially recommended for American Studies students.)

English: 204 (acceptable only for non-English majors taking only one course in American literature), 341, 342, 343, 344, 345, 347, 348, 349, 441, 445;

History: 103 and/or 104 (acceptable only for non-history majors who take no other American history courses), 371, 372, 374, 375, 377, 378, 379, 380, 386, 391, 393, 414*, 415*;

Economics: 370;

Liberal Engineering: 311;

Black Studies: 101, 102

Philosophy: 317*

Religious Studies: 204, 331*; 332;

Social and Behavioral Sciences: 397, 398;

Geography: 303*;

Earth Science: 341*; 403;

Political Science: 201*, 301, 303, 307, 309, 311, 313, 315, 317, 319, 321*, 322*, 357, 496;

Sociology: 271, 310*, 321, 325, 432.

Director: Frank Porter Graham Associate Professor Maxwell
Assistant Director: Assistant Professor Thomas
Instructor: Beverly O. Ford

The Black Studies Program is divided into four phases which have corresponding courses applicable to each year in the undergraduate curriculum.

PHASE I. WHO AM I? The controlling objective of Phase I is to initiate awareness and exploration. This process involves both personal and intellectual growth in all areas of academic, social and communal relations with yourself and those around you. In an effort to help incoming students adjust to the diversities of the college curriculum, a series of courses has been grouped together to form the Freshman Block.

A major part of the Black Studies Program is the Human Relations Lab at the beginning of each year. The lab, commonly referred to as "The Encounter," helps the student in his academic course of study. Through a series of three-day sessions, the student is helped to develop skills in communication, group participation, listening, setting goals and effectively pursuing them.

Fall Semester	*Spring Semester*
Black Experience 101	Black Experience 102
English 101	English 102
Math 101	Electives
Psychology 101	
History 103	
Sociology 151	

PHASE II. WHY AM I HERE? The controlling objective of Phase II is to deepen the self-awareness begun in Phase I and to awaken in the student an appreciation of Afro-American culture in the aesthetic and social realms. The primary courses for Phase II include:

Afro-American Culture I-a survey course which analyzes the Black experience through literature, music, drama and art.

Afro-American Culture II-a survey course which examines social, political, economic and educational institutions from the Black perspective.

PHASE III. WHERE DID I COME FROM? The controlling objective of Phase III is to develop the skills and provide the framework necessary to help the student move to a higher level of theorizing and exploration. The primary focus of Phase III includes:

Research Methods—the design of a research project from the Black perspective with emphasis on developing sound research methods.

Experiential Learning-the purpose is to draw up an hypothesis from the total learning experiences in Phases II and III, which the student hopes to validate.

PHASE IV. WHERE DO I GO FROM HERE? The controlling objective of Phase IV is to provide a process through which the student can answer the question, "Where Do I Go From Here? By means of a senior project and participation in a seminar with others engaged in research in Afro-American and African Studies, the student will attempt to appraise where he is now, given his personal and academic growth in the first three phases: The primary focus for Phase IV includes:

Participation in the Human Relations Lab
Senior Seminar
Senior Project
Certification by the Advisory Committee

From Phase I to Phase IV, the curriculum is structured to aid not only in the academic development of the student but also in the development of his entire being.

Community Projects

Involvement in the Black Community is essential in all phases of the Black Studies Program. It is here that students utilize their skills in learning and communication.

PHASE I students may participate in various tutorial programs and give valuable assistance to senior citizens. Sample areas of involvement:

Elementary Schools
Junior High Schools
Senior High Schools
Green Acres Rest Home

PHASE II AND PHASE III projects emphasize the aesthetic and social realms of Black life and are open to intuitive explorations and experimental research. Sample areas of involvement:

Oyo Tunji Village
Kwanzaa
Charlotte-Mecklenburg Afro-American Cultural and Service Center
Development of Independent School
Black Business Enterprises
Student's Trip to Africa

PHASE IV projects should be geared to extensive research in both African and Afro-American Studies.

BLACK STUDIES

BLS 101. THE BLACK EXPERIENCE. (3) Prerequisite: consent of the instructor. Core course for all students with a keen interest in the personal development of Black awareness. Opportunities for exploration of self-definition and development of interpersonal relationship skills which will create and facilitate effective community dialogue and action.

BLS 102. THE BLACK EXPERIENCE II. (3) Prerequisite: BLS 101 or consent of the instructor. Core course for all students with a desire for further personal development of Black awareness. Student orientation to experiences in education involving a Black perspective. Insight concerning the significance of an Afro-American experience in education as a revelant and serious topic for study and examination.

BLS 203. AFRO-AMERICAN CULTURE I. (6) Prerequisite: BLS 101 or its equivalent; consent of the instructor. A survey course which analyzes the Afro-American experience through literature, music, drama and art. Research and creative action projects will be required.

BLS 204. AFRO-AMERICAN CULTURE II. (6) Prerequisite: BLS 101 or equivalent; consent of instructor. A survey course which examines social, political, economic and educational institutions from the Black perspective.

BLS 301. WEST AFRICAN LITERATURE. (3) Prerequisite: consent of the instructor. A survey of West African Literature reflected in fiction and poetry. Both the oral tradition and works of recent West African authors will be treated.

BLS 350. TOPICS IN AFRO-AMERICAN AND AFRICAN STUDIES. (3) Treatment of a special topic. May be repeated for additional credit with approval of the director.

BLS 390. RESEARCH METHODS. (3) Prerequisite: completion of Phase II. The design of a research project from the Black perspective with emphasis on developing sound research methods.

BLS 492. COLLOQUIUM. (3) Prerequisite: BLS 101 and 102 and consent of the instructor. A weekly colloquium for students engaged in research and writing to provide opportunity for mutual stimulation, critique and problem solving. Not open to majors for credit.

DEPARTMENT OF CREATIVE ARTS

Chairman: Professor DiCecco

Art

Associate Professor: Anderson, Mason
Assistant Professors: Byrum, Hill, Hybel, MacKillop
Instructors: Bringle, Soellner, Wofford

Music	*Professors:* Mathis, Booth, DiCecco *Associate Professors:* Cobos, Dailey *Assistant Professors:* Langley, Mosley, Reid, Turner *Instructor:* Benjamin
Theater	*Associate Professors:* Rackley, Reed *Assistant Professor:* Beasley *Instructors:* Croghan, Tucker
Dance	*Assistant Professor:* Zimmerman

BACHELOR OF CREATIVE ARTS DEGREE PROGRAM

Introduction

The Bachelor of Creative Arts program is based on the idea that learning and the creative process work best with individuals, rather than groups—that only individuals and not groups learn and create.

What the BCA Program Proposes

The BCA offers each student more than just a degree in the creative arts. First, it places initiative on the individual student and his ability to perceive relationships (problem-solving). Second, it offers a new relationship between student and teacher. Rather than dividing students into classes, feeding them information and expecting all students to assimilate the same material identically, the faculty member serves as an adviser and resource person.

Third, it allows the student to explore facets of the arts which interest him and relate to his talents. Finally, recognizing that education extends beyond the bounds of mastering only one art, the student is encouraged to explore all aspects of creativity, the arts and their relationship to man and his development. To accomplish this, the student has at his disposal all of the University's resources.

Admission to the Program

Upon admission to the University of North Carolina at Charlotte, a student may apply for admission to the Bachelor of Creative Arts program. The prospective student will be requested to interview with the faculty from the major area of his interest: art, creative writing, dance, music or theater. Additionally, a student will be asked to audition, submit a portfolio and generally give as thorough an accounting of his background as possible. Within a reasonable amount of time after his interview, a student will receive notification of the success of his application to the Bachelor of Creative Arts program.

MECHANICS OF THE PROGRAM

A. Eligibility: The program is open to all students eligible for admission to the University of North Carolina at Charlotte. Since the program is flexible and organized around the individual student's motivation and interests, a student may enter the program from another division within the University or transfer from another institution at any level. Evaluation of traditional credits is necessary since the experiential aspects of seeking and discovering relevance and relationships is a subjective process and since the student's thrust, interest and pace are his own. Advancing through the program and the completion of the degree are determined by the continuing process of evaluation (see below).

B. Continuing Students: The continuing student will begin his work on the BCA at his present level.

C. Transfer Students: Any person from outside the Creative Arts Department coming into the BCA program is considered a transfer student.

D. Withdrawal: The faculty and the student involved in the total efforts of a student who is withdrawing from the program will equate his work into conventional hours credit, including grades and quality points. Additionally, a prose record of evaluation will become a part of the student's permanent record at this institution, to be shared with the institution being transferred to if that institution so desires.

E. Central Information Chart: A continuously running calendar blocked off into days has been set up. The following information is communicated by means of this calendar: activity, date, time, leader, etc. These will be posted by individual faculty members prior to the activity. Time conflicts can be minimized by checking the CIC before scheduling the activity.

F. Structural Method:

1. General Contractual Procedure: a. The student writes a proposal that states and defines a problem at its beginning and indicates a possible direction toward a solution. b. If a change of direction or completion date is undertaken before the final evaluation, the project adviser must be consulted. c. Reviews, bimonthly and master, are in oral and/or written forms. The reviews of the students' works are done by the student, his fellow students and the project adviser(s). d. The master review is kept on file in the office of the Creative Arts Department until graduation. (The student and his adviser receive a copy of each master review report.)

2. Seminars: Seminars and group sessions cited in the outline are free-forming interacting groups, focusing on specific common interests and problems.

3. Review and Evaluation: Because of the nature of the program, the student's major adviser and his other mentors are constantly involved with the student in evaluating. The program is intended to develop within the student honest self-examination and self-evaluation. The success of the student will, to a great degree, be determined by his own increasing ability to assess and evaluate his own potential, commitment and accomplishment. Semester and yearly evaluation procedures (see below) serve an educative function in that they involve the student in self-evaluation and in confrontation with evaluation by his peers and his instructors.

   By the end of each semester, evaluation of the student's progress will have been made by the student's advisee group, consisting of faculty and students. This will follow a self-evaluation in advisement with the student's adviser. The grade designation will be:

   P - PROGRESSING
   S - SATISFACTORY
   U - UNSATISFACTORY

   Since the evaluation is based on the student's moving toward becoming an independent, self-motivating learner, only one grade will be assigned. At the end of each year, the student will have:

   a. evaluated himself in advisement with his adviser;

   b. participated in an evaluation of his progress with the student-faculty in his advisee group.

   The grade designation will be:

   P - PROGRESSING
   S - SATISFACTORY
   U - UNSATISFACTORY

   The grade of *P* reflects awareness and in-depth involvement within the self-evaluation guidelines.

   The grade of *S* reflects momentum towards realization of the self-evaluation guidelines.

   The grade of *U* reflects a lack of interest, participation and motivation towards realization of the self-evaluation guidelines.

   Since the program is geared to the student's specific interests and insights, a student whose yearly evaluation is unsatisfactory will be encouraged to reassess his goals and his desires and abilities to move productively on his own.

This reassessment will be done by the student's group. This effort will be toward helping the student determine the field and the structure in which he can function more productively, rather than simply eliminating him from the Creative Arts program.

G. Teacher Certification: If a student selects education in the arts as his major area, in order to receive professional certification, he would not take general courses usually required to fulfill such certification. Teacher certification through the BCA requires: 1. A student must declare certification intent at least four full semesters prior to the awarding of his degree. 2. The student must demonstrate proficiency in communication and humanities; natural, social and behavioral sciences; psychological and sociological foundations of education; parent-school-community relationships; curriculum activities and techniques; and materials, methods and practices appropriate to the teaching area and level. A student must show an awareness of the various educational philosophies relating to the arts. 3. Student teaching may be done in connection with projects. The 90 to 150 clock hours required in actual classroom teaching may be carried on within the eight semester residency as the student feels the need to put himself in teaching situations.

H. Residence: The complete program will require a minimum of eight semesters; the final two of which must be done in the BCA program. A full semester term is equal to one semester. For a transfer student, any semesters completed before entering the program will apply toward this minimum.

I. Completion of Degree

1. Recommendation by principal professor, by two other professors in the field and by two professors from outside the candidate's field.

2. Appraisal of candidate's portfolio, manuscripts or performance by the principal professor and by two other professors from the Creative Arts faculty.

3. Recommendation by a review board of three students from candidate's field. These boards were elected by all of the students in each of the specific fields.

I. *First Year*

A. *Art*

A first year program designed to offer the beginning student in art:

1. A thorough orientation to the objectives of the BCA program and the personal involvement necessary to achieve independent status.

2. An understanding of the basic visual fundamentals, principles and art theory necessary to the formulation of projects and independent research.

3. A format for learning that offers an alternative method of education in the arts, with emphasis on the interrelationship of the arts and the other academic areas.

4. An opportunity to work independently, and in groups, with students of similar needs, directions and levels of artistic development.

5. An opportunity to fail with recourse for establishing positive new directions.

6. An opportunity to work with experienced students in the program to help establish sound working patterns necessary for personal achievement and satisfaction.

7. A foundation for the development of personal as well as artistic maturity.

8. The responsibility of learning to design one's own educational future.

9. An opportunity to work with all area coordinators and faculty to help orient your needs as a first year student.

10. An opportunity not every student can handle or cope with, the first year program is designed to help the student move as gracefully as possible in his educational process, but this method is not guaranteed for all. The student will be asked to make this evaluation the first year.

Semester I

Phase I Orientation to the BCA

2 wks. Seminars, workshops, experience in learning.

a. What is the BCA? (The philosophy, specific and general.)
b. Role of student
c. Role of adviser
d. Role of coordinators and chairman
e. Role of peers, peer evaluation, advisee group
f. Resource persons and faculty
g. Role of artist as problem former and solver
h. Problem solving techniques
i. Why paper work is necessary and who is responsible

j. Summation of mechanics, individual roles, philosophy and responsibilities

Phase II *6-7 wks.* Presentation of seminars by various faculty and faculty teams of visual fundamental and interrelated principles.

a. Project formation as related to the elements of design
b. Project formation related to principles and fundamental theory
c. Criticism and evaluation - project work
d. Art area faculty seminars
e. Tri-area seminars - small groups on project design
f. Art history block - flexible
g. Summation and analysis

Phase III *2 wks.* Making contacts outside the BCA and Rowe Arts Building

a. Short term projects outside Rowe Arts testing relationship of the art and the artist to other academic areas.

Phase IV Participation in faculty advisee group meeting and interest area seminars.

a. Responses, questions, summation
b. Semester evaluations

Semester II *Phase V* *6-8 wks.* Continuation of visual fundamental seminars as pertaining to specific areas and media.

a. Working more with applied faculty
b. Formulation of possible interest areas and directed study.
c. Media survey and exploration - seminar work.
d. Project continuum theory - what is the need?
e. Summation

Phase VI *2 wks.* Mock project proposal and critical analysis

Phase VII *2-3 wks.* Actual project work reference to visual fundamental exposure and evaluation by entire freshman group, coordinator, related faculty.

Phase VIII Assignment of advisers by April 15, analysis of first year program and screening for students seeking second year status.

The art area coordinator is responsible for the freshman student's progress through the entire first year. The student is responsible to the coordinator by attending weekly group meetings and individual advising sessions.

B. *Music*

1. The new student program in music is designed to smooth the transition for freshmen and transfer students from a structured educational environment to an unstructured one. Each new student in the Bachelor of Creative Arts must make this adjustment in order to embark upon a program involving self-motivation and initiative. An attempt is also made in the new student program to clarify the ideal of the BCA program and to give practical experience to each student in the problem-solving technique. It is hoped that during the first year, the student will begin to develop a perception of the arts as they relate to one another.

   A. Orientation discussions: Daily sessions to help the student understand how he can best develop his abilities in the BCA program. These discussions will include descriptions of how we go from the specific to the general; that education can be achieved through music, rather than the education being assimilated in order to "get at" art.

   B. Define goals: Each student expresses his educational and professional goals. This is necessary in order to help him determine his course of study at UNCC. Consideration is made as to not only "What basic skills do I need?," but "What kind of person is needed to carry out this plan successfully?"

   C. Identify resources: Procedures for use of the library and the Rowe listening lab are outlined. The Rowe Project Board and music area Resource Board are introduced. Workshops and seminars and the procedure for establishing both are described.

   D. Specialized resources established: Faculty members are introduced and their special fields of interest described. Students then identify their principal or "applied" professor, and an

association is established. Ensemble work is encouraged and organized for instrumentalists and vocalists, and composers are organized into a peer group. Teacher certification is discussed and interested students identified.

2. Group Activity: Designed to demonstrate how one can begin with sound and learn about music: a beginning in process of starting with music and learning about other aspects of education as they relate to music.

   A. Melody. Through the study of a melody, the group will consider notation, ear-training, theory, style, color, shape in music.

   B. Harmony. Using their own melodies, the students will discuss tonal and non-tonal techniques of composition. Style and the effect of different styles will be considered, thus incorporating the related fields of psychology, acoustics and history, to name a few.

   C. Rhythm. Motion and speed will be discussed.

   D. Tone color. The drawing together of these experiences with melody will be the expression of the melody in its intended medium. This may necessitate the study of instrumentation, vocal potentials, electronic devices, ancient performance practices or, simply, development of the composer's ability on his instrument.

3. Project. Association with the applied professor will result in the emerging of a piece of music as a significant concern for the student. A project will evolve, and, as it does, the group will help the student develop the project's many facets. Procedures for drawing up a project proposal will be outlined, and presentation of the project described.

4. At the completion of a project, the student will be evaluated by a group consisting of his major adviser, his applied professor (project adviser) and his advisee group, perhaps including peers who are not in the advisee group.

5. The Arts: A series of experiential workshops will be set up to discuss activities within and outside the Rowe Building. These will be open to all students and faculty, conducted by appropriate faculty and/or students and designed to whet the curiosity of all and increase knowledge and awareness of the arts as they relate to one another and to life.

C. *Theater*

Freshman theater students, as well as transfer students without a background in theater, form the area coordinator's advisee group. It is desirable to have these freshmen students in one group in order to satisfy two needs:

1. the need to have freshmen understand the concepts and mechanics of the Creative Arts program with some consistency;

2. the need to provide freshmen students with a forum in which they can discuss problems knowing that no one in the group is more experienced in dealing with such problems—a lessening in the students' fears of intimidation and ridicule.

The coordinator is responsible for assuring that the freshman is acquainted with and exposed to the other faculty members and upperclassmen. In addition to whatever exposure the student seeks on his own, he will be in contact with other Creative Arts faculty members through productions, workshops and seminars; he will be in contact with upperclassmen through productions, workshops and a "student adviser" plan through which each freshman is assigned an upperclassman who is available for consultation on problems dealing with the Creative Arts program and adjusting to university life.

The transfer student with a background in theater would be duplicating experience needlessly should he/she be a member of the coordinator's advisee group. Therefore, such transfer students are assigned to other faculty members as advisees. These students are encouraged to attend sessions with freshmen which deal with the concepts and mechanics of the Creative Arts program. Such a decision, however, should be made by the adviser and the student.

1. Conferences with Adviser (Area Coordinator):
   Each student in the first year program meets with the coordinator of the theater area at frequent intervals during his/her first year. During these meetings discussion centers around three major topics:
   A. A determination of the student's interests and level of artistic and humanistic development;
   B. The establishment of a program of study for the first year designed to strengthen the student's major interest area and to offer fundamental skills and a basic orientation into other areas of the theater arts;
   C. The development of the student's awareness of various resources—including people, books, seminars, etc.—pertinent to the student's interests and personal growth.

2. Advisee Group Meetings:
All first year students meet with the coordinator twice a week as a group. The specific content dealt with in these meetings is dependent upon the needs of the group. Three broad categories of topics are considered:

   A. The mechanics of learning in the Creative Arts program (the problem-solving approach, individual movement from the specific to the general, the project proposal, etc.);
   B. The evaluation process as the core of the Creative Arts program—self-evaluation, group evaluation and adviser evaluation; "P, S, and U" as meaningful evaluation designations;
   C. The oral presentation, discussion and evaluation of each individual student's work-in-progress. This will lead to detailed consideration of ideas, structure and expression in specialized areas of the theater.

3. Participation in Theater Productions:
Each freshman and transfer student is expected to participate in some aspect of each theater production offered by the Department of Creative Arts during the year. Involvement must not be limited to the student's major interest. The student should seek experience in as many phases of theatrical production as possible: acting, stagecraft, stage lighting, costuming, properties, sound, make-up, publicity, front-of-house and, in some cases, design and directing.

4. Workshops:
Workshops will be organized to augment the student's experience in the area of his/her major interest and to supply fundamental knowledge, skills and experience in other areas of theater. A workshop should coincide with the student's involvement in a particular production. Workshops in the student's major interest, if one is developed by this point, may be continued. These workshops will be staffed by members of the theater faculty and by advanced, qualified students.

D. *Dance*

Dance in the Bachelor of Creative Arts program, was implemented in the 1974-75 academic year. For further information, please contact the Department of Creative Arts.

II. *Second Year*

Conferences with consulting professors (to be arranged). The student, with his major adviser, plans a course of study tailored to

his interests and needs. Such a plan would involve consultants from various departments in the University who would serve as resource mentors.

A. *Music*

1. Musicianship studies

a. Independent projects: Study areas are to be determined by the student's special interests and skills; such as counterpoint, composition, orchestration and conducting. Such interests as the musical significance of the historical development of instruments, the psychological and physiological mechanisms of the production and perception of sound and the cultural milieu of certain musical styles should lead the student to investigations involving fields other than the Creative Arts.

b. Seminars: These seminars involve the topics arising from independent projects. The purpose is to present an integrated view of the evolution of music—its literature, theory and changing compositional and performance practices.

2. Performance studies

a. Individual

b. Ensemble

B. *Visual Arts*

1. Studio

a. General floating seminars, e.g., Visual Fundamentals, Methods, Techniques, etc.

b. Individually oriented investigations. The student could choose one, two or three interest areas to pursue concurrently or consecutively. These investigations might include both highly specialized art areas and topics which would cut across departmental boundaries. For example, studies in the technical aspects of ceramics or color or sculpture could lead the student toward chemistry, psychology or history. Painting, depending on interest in styles, could lead to poetry, mathematics, iconography, history and anatomy.

c. Consulting professor and one other visual arts instructor. Professors from other departments

are also invited if a topic demands more precise information.

d. This could also relate art history to the specific topics of investigation the students are currently pursuing.

C. *Theater*

1. Studio—Student chooses one of the following areas:

a. Acting and Directing

(1) Group - Skill in the use of voice and body. Coordinators: Speech and dance staffs.

(2) Group - Inner technique: Improvisations, theater games, mime, sensory and emotional exercises. Coordinators: Theater staff.

(3) Individual or group - individual projects in characterization. Group work on current major or student-directed workshop productions.

b. Designing

(1) Individual projects in the visual arts or architecture. Instructors in art and architecture serve as mentors in guiding the student in his project.

(2) Individual projects in theater design. The student and his consulting professor work out individual and group projects in theater design, correlating these with the student's art and/or projects.

c. Writing

(1) Individual writing projects under the guidance of theater staff and consultants. This project might be geared to workshop productions.

(2) Group discussions and criticism of student's manuscripts. Coordinators: Theater staff and consultants.

2. Studies in dramatic literature

Group and individual programs of reading and research determined by each student's interest and coordinated with his work in acting, directing, writing or design. Coordinators: theater staff and visiting professors.

3. Colloquium

Theater is the context of selected historical periods—readings, discussions, lectures, research. Coordinators: theater staff and visiting professors.

D. *Service functions for the non-creative-arts major*

Since the program is concerned with the self-thrust of the individual student in the process of discovery in preference to exposure to a body of selected materials, the opportunity for involvement of the non-creative-arts major is greater. The non-major will be free to proceed into the program under various seminars open to both creative arts and non-creative-arts majors. The non-major will register for the courses CA-071 (Instrumental Music) and/or CA-081 (Chorus) for one hour credit; CA-211A, 211M, 211T for one hour credit; CA-212A, 212M, 212T for two hours credit; and CA-213A, 213-M, 213T for three hours credit. Students enrolling in these sections will receive a grade according to the University-wide grading system. Beyond the initial seminar, the philosophy of work in the Creative Arts will be based on the same principles as those for the Creative Arts major.

III. *Third and Fourth Years*

A. *Assignment of Creative Arts Adviser*

1. The student and his major adviser plan specific projects in the student's area of major concern, e.g., violin, painting, directing and education in the arts.

It is important, however, that the planning of such projects will assist the student to an ever greater awareness of his need to move from the specific to the general.

2. The student's third and fourth years of study operate largely on a contractual basis. Therefore, time allocations and projects pursuits are more flexible from semester to semester.

B. *Seminar/Workshops*

1. Seminar/workshop offerings could be changed, expanded, etc., to meet the needs and interests of the students. Seminar/workshops are for all Creative Arts students.

2. Seminar topics would deal not only with the arts but also with more general and interrelated issues concerning the human condition.

3. Examples of seminar/workshop topics:

   a. Aural, kinetic and visual environment—past, present, future.

   b. Professional—problems of interviewing, procedures of job-seeking, publication, exhibitions, performances, etc.

   c. Selected topics in painting, sculpture, counterpoint, playwriting, orchestration, fiction, etc.

   d. Selected topics in aesthetics.

   e. Arts in urban life.

   f. Abstraction, e.g., mathematical formulae, logos, musical and dance notation, etc.

   g. Selected topics in arts education, e.g., music education for elementary teachers, art education for elementary and/or secondary teachers.

C. *Music*

1. Area of major concern.

2. Area of secondary concern.

D. *Visual Arts*

1. Area of major concern.

2. Area of secondary concern.

3. Coordinating seminar.

   a. Written and oral work.

   b. Discussion of work in progress.

   c. Taken usually in last year of program.

   d. Selected topics (general)—visual arts and other fields.

   e. Coordinators - two or three visual arts instructors.

E. *Theater*

The third and fourth years in theater are centered around eight major productions. A student contracts to work in his

area of major concern on at least five of these productions and in his area of secondary concern on the remaining three.

The Department of Creative Arts wishes to make available to the non-BCA student activities and involvement in the arts. Those students wishing to avail themselves of the broad opportunities for study possible in the Creative Arts may register for the following courses in directed projects involving art, dance, music or theater: 211, 212 and 213.

The last digit in the course number code indicates the credit hours. The letter code indicates the area of discipline (A, D, M or T) i.e. 213M signifies a three-credit hour course in music.

Directed Projects

Directed Projects are not classes. They are learning programs designed for and by individual students who wish to pursue study in the Department of Creative Arts, e.g. Music, Art, Theater, Creative Writing, Dance or any combination.

Any regularly enrolled UNCC student other than BCA majors may elect Directed Projects and, subject to the approval of an adviser develop a project which focuses upon the student's unique interest and abilities.

A project may take the form of research, studio lessons, the study of music literature, ceramics, sculpture, painting, writing or countless other forms of the student's devising.

Directed Projects may be elected for one, two or three hours credit or a maximum of six hours in any one semester.

Students electing Directed Projects will need to see the assigned adviser at the first meeting, as designated on the schedule.

Ensemble

MUS 071. (1) Instrumental Ensemble. May be repeated for credit. Credit limited to one semester hour per semester. Prerequisite: consent of instructor.

MUS 081A, 081B. (1) Chorus. May be repeated for credit. Credit limited to one semester hour per semester.

DEPARTMENT OF ENGLISH

Chairman: Professor Burne
Professors: Ellis, Mason, McCall, Moose, Denny (Emeritus), Wallace (Emeritus)
Associate Professors: Carver, Davis, Gatlin, Shapiro, Varnas
Assistant Professors: Amante, Brashear, Grey, Harper, Hedges, McGavran, Meyer, Newman, Petrakis, Robinson, Watson
Instructors: Bowen, Hilton, Keuling, Pierce, Selden, Stone

Writer-In-Residence: Blythe
Lecturers (part-time): Barden, Graham, Imschweiler, D. McGavran, Rothwell, Terry, Timson, Helms

A major in English leading to the B.A. degree (except for students in the early childhood teacher certification program) consists of 30 semester hours of course work above the 100 level. All English majors must take English 101 and 102 (unless exempted). Course requirements at the 200 level shall consist of a minimum of six hours taken from among the following courses: 201, 202, 203, 206, 207, 211, 212. A maximum of 12 hours from among these courses may count towards the English major. Prerequisites for 200-level courses are English 101 and 102, or the equivalent; 102 may be taken concurrently with a 200-level course with the consent of the department. Requirements above the 200 level are as follows: (a) one American literature course; (b) one British literature course, pre-1800; (c) one British literature course, post-1800 (including the Romantic period course). Prerequisite for all 300- and 400-level courses is at least one course at the 200 level.

The above requirements apply to the regular English major and to those students seeking teacher certification on the secondary level. Students in the secondary certification program are required to take six hours in English language or composition beyond 101-102, and consult with the College of Human Development and Learning regarding other courses required for certification.

A major in English for students in the early childhood teacher certification program consists of 24 semester hours of English courses (plus English 303) numbered 200 or above, including a minimum of six hours at the 200-level (6); English 332 (3)*; one British literature course, pre-1800 (3); one British literature course, post-1800 (including English 325) (3); one American literature course (3); and six additional hours of courses within the department numbered 300 or above. Outside the department students must complete all requirements for the early childhood certificates (K-3 or Intermediate).

NOTE: Whenever a student is admitted to the English Department as a major, he is to be told by the department in writing that his status is conditional upon: his making at least a *C* average in the first nine hours of English taken *here;* and upon his making at least a *C* average on the papers written for the courses, taken together. If he has the *C* average

* Students beginning the Human Development and Learning sequence in the Fall of 1971 and later may substitute English 461 for English 332 at the discretion of the department.

on courses but not on papers, he may take further work in composition and may qualify fully as an English major if his composition instructor approves. If he meets the above standards, the department will admit him in writing to full status as an English major.

If his average on English courses falls below 2.0 at any time or his composition falls below average, there is to be a conference between the student and his adviser as to his continuing status as an English major.

COURSE DESCRIPTIONS

ENGLISH

ENG 099. ENGLISH AS A FOREIGN LANGUAGE. (no credit) Limited to students whose native language is not English who may need additional preparation for their regular academic work, including composition courses.

ENG 101-102. ENGLISH COMPOSITION. (6) Introductory readings in varieties of literature and intensive practice in critical and expository writing. (NOTE: To complete the general degree requirement of six hours of English, a student should take 101 (3), and three of the one-hour five-week courses numbered 102. English 101 is prerequisite to 102.)

ENG 201. ENGLISH LITERATURE. (3) Prerequisites: ENG 101 and 102. Intensive study of masterpieces of British literature in chronological sequence before 1800.

ENG 202. ENGLISH LITERATURE. (3) Prerequisites: ENG 101 and 102. British literary masterpieces since 1800.

ENG 203. MASTERPIECES OF MODERN FICTION. (3) Prerequisites: ENG 101 and 102. Readings in selected novels and short stories written since 1850.

ENG 204. MASTERPIECES OF AMERICAN LITERATURE. (3) Prerequisite: ENG 101 and 102. Extensive readings in six to eight authors, approximately half from the nineteenth century and half from the twentieth century, both poetry and prose. Recommended for non-English majors who are working for certification. Does not count toward an English major.

ENG 206. FILM CRITICISM. (3) Prerequisites: ENG 101 and 102. An introduction to film as an art form. Emphasis will be on critical theory and on critical analysis of the form and content of different kinds of films—e.g., the narrative film, the silent film, the documentary film, etc.—drawn from the international cinema. Students will apply critical theory to the analysis of professionally made films and will have the option of making their own short films.

ENG 207. CRITICAL APPROACHES TO LITERATURE. (3) Prerequisites: ENG 101 and 102. An introductory study of critical methods,

such as mythological, psychological and existential, and practice in analyzing and evaluating literature. Limited to English majors and those having the permission of the department.

ENG 211. MASTERPIECES OF WORLD LITERATURE I. (3) Prerequisites: ENG 101 and 102. Readings in Greek, Latin and Eastern works in translation.

ENG 212. MASTERPIECES OF WORLD LITERATURE II. (3) Prerequisites: ENG 101 and 102. Readings in Medieval, Renaissance, and Modern European literature in translation.

NOTE: Prerequisite for 300 or 400-level courses: three semester hours of English on the 200 level, unless otherwise specified.

ENG 301. GREEK AND ROMAN DRAMA IN TRANSLATION. (3) A study of selected plays of Aeschylus, Sophocles, Euripides, Aristophanes, Platus, Terence, and Seneca with emphasis on dramaturgy and the development of the Greek and Roman theater.

ENG 303. CHILDREN'S LITERATURE. (3) Critical study of representative reading materials and approaches to literature appropriate for elementary school children. Does not count toward an English major.

ENG 313. MILTON. (3) The major poems and selections from the minor works.

ENG 316. SHAKESPEARE'S EARLY PLAYS. (3) A study of 10 representative plays from the Comedies, Histories and Tragedies written between 1590-1600.

ENG 317. SHAKESPEARE'S LATE PLAYS. (3) A study of 10 representative plays from the period 1600-1611, including the late Tragedies and Tragi-comedies.

ENG 323. ENGLISH LITERATURE, 1660-1785. (3) Poetry and prose from Dryden through Johnson; collateral readings in drama and the novel.

ENG 326. THE ROMANTIC ERA, 1785-1832. (3) The development of the Romantic movement with emphasis on the works of Wordsworth, Coleridge and other major poets.

ENG 326. THE VICTORIAN ERA TO 1870. (3) Emphasis on Tennyson, Browning, Arnold, Carlyle, Ruskin and Newman.

ENG 327. ENGLISH LITERATURE FROM 1870-1914. (3) British literature from Walter Pater to the 1st World War.

ENG 328. BRITISH LITERATURE SINCE 1914. (3) The chief British writers and literary movements from World War I to the present.

ENG 332. INTRODUCTION TO MODERN ENGLISH.* (3) An introduction to the phonology and grammatical structure of present-day English, with some consideration of word formation, changes in meaning, dialectal differences and, and problems of usage.

ENG 341. AMERICAN LITERATURE, 1820-1870. (3) The important writers and literary movements from Irving to Whitman.

ENG 342. AMERICAN LITERATURE, 1870-1920. (3) The important writers and literary movements from Whitman through the period of World War I.

ENG 343. AMERICAN LITERATURE, 1920 TO THE PRESENT. (3) The important writers and literary movements from the twenties to the present.

ENG 344. THE AMERICAN NOVEL OF THE NINETEENTH CENTURY. (3) Major novelists and traditions from the beginnings of the American novel through the rise of realism, with primary attention to approximately eight or 10 representative novels.

ENG 345. THE AMERICAN NOVEL OF THE TWENTIETH CENTURY. (3) Major novelists and traditions from the emergence of naturalism to the present, with primary attention to approximately eight or 10 representative novels.

ENG 347. EARLY BLACK AMERICAN LITERATURE. (3) A survey of significant writings by Black Americans before the Harlem Renaissance.

ENG 348. TWENTIETH CENTURY BLACK AMERICAN LITERATURE: PROSE. (3) An intensive study of selected black American twentieth century writers of fiction and non-fiction, beginning with the Harlem Renaissance.

ENG 349. TWENTIETH CENTURY BLACK AMERICAN LITERATURE: POETRY AND DRAMA. (3) An intensive study of selected Black American twentieth century writers of poetry and drama beginning with the Harlem Renaissance and including the Black Arts Movement.

ENG 350. TOPICS IN ENGLISH. (3) May be repeated for additional credit with approval of the department. Prerequisite: consent of the department. This course is designed to offer special topics not included in other courses.

ENG 351. LITERARY CRITICISM THROUGH ARNOLD. (3) The major schools and critics.

* Students beginning the Human Development and Learning sequence in the fall of 1971 and later may substitute English 461 for English 332 at the discretion of the department.

ENG 352. INDEPENDENT STUDY. (1 to 3 semester hours credit.) May be repeated for additional credit with approval of the department. Prerequisite: consent of the department. Individual investigations and appropriate exposition of the results.

ENG 412. ENGLISH LITERATURE FROM THE BEGINNINGS TO 1500. (3) A systematic survey of English literature from the beginning to the end of the 15th century, excluding Chaucer. All the works studied in this course will be in translation.

Courses for Advanced Undergraduates

ENG 305. EXPOSITORY WRITING. (3) The writings of essays, criticisms and various forms of exposition.

ENG 306. INTRODUCTORY CREATIVE WRITING. (3) Open to students of at least sophomore standing who have satisfied the requirements of ENG 101 and 102. Writing of fiction, poetry, or drama.

ENG 311. CHAUCER. (3) *The Canterbury Tales, Troilus and Criseyde* and selected minor works.

ENG 321. THE EARLIER SEVENTEENTH CENTURY. (3) Major writers from Bacon and Donne to the Restoration.

ENG 331. HISTORY OF THE ENGLISH LANGUAGE. (3) Origins and development of the English language and its present usage.

ENG 401. MODERN LITERARY CRITICISM. (3) Critical theories of the modern schools.

ENG 405. WRITING WORKSHOP. (3) Prerequisite: ENG 306 and permission of the instructor. May be repeated twice for credit with the consent of the department.

ENG 406. ADVANCED EXPOSITORY WRITING. (3) Prerequisite: ENG 305. May be repeated twice for credit with the permission of the department.

ENG 413. ENGLISH PROSE AND POETRY OF THE SIXTEENTH CENTURY. (3) The major works, excluding drama, More through Spenser, with attention to the development of the lyric.

ENG 421. THE ENGLISH NOVEL BEFORE SCOTT. (3) Major writers and traditions, Defoe through Jane Austen.

ENG 422. THE NOVEL FROM SCOTT THROUGH THE VICTORIANS. (3) Major writers and traditions through Hardy.

ENG 423. THE MODERN BRITISH NOVEL. (3) Representative British novels showing the philosophies and techniques affecting British fiction, from Hardy to the present.

ENG 424. MODERN IRISH LITERATURE. (3) The study of important developments in Irish literature between 1885 and the death of Yeats (1939).

ENG 431. ENGLISH DRAMA TO 1600, EXCLUSING SHAKESPEARE. (3) A survey of the development of English drama to 1600, with representative plays from the Mystery-Miracle Cycles, the Morality Plays, and Tudor drama, including Lyly, Kyd, Marlowe, Peele, Greene and Dekker.

ENG 432. ENGLISH DRAMA FROM 1600 to 1642, EXCLUDING SHAKESPEARE. (3) A survey of Jacobean and Caroline drama, including plays by Jonson, Beaumont and Fletcher, Webster, Middleton, Shirley and Ford.

ENG 433. ENGLISH DRAMA FROM 1660 TO 1780. (3) Representative plays of the Restoration and Eighteenth Century (Davenant to Sheridan), studied in connection with conditions in the theater and pertinent dramatic criticism of the period.

ENG 441. COLONIAL AND EARLY AMERICAN LITERATURE. (3) American literature from Colonial times to Washington Irving.

ENG 445. LITERATURE OF THE AMERICAN SOUTH. (3) Selected works of Southern writers from Colonial times to the present.

ENG 450. CONTEMPORARY POETRY. (3) Poetry in English (including translations) since 1940.

ENG 451. MODERN DRAMA. (3) Representative British and American plays from Shaw to the present.

ENG 452. MODERN EUROPEAN LITERATURE. (3) The study of selected European authors and their intellectual backgrounds.

ENG 453. CONTEMPORARY FICTION. (3) Study of selected present-day novels in English and in translation.

ENG 455. INTRODUCTION TO PAN-AFRICAN LITERATURE. (3) May be repeated for additional credit with approval of the department, as the geographical emphasis varies. A survey of significant Pan-African literature (Caribbean, West African, East African, etc.) emphasizing both the oral tradition and works of contemporary authors.

ENG 461. MODERN ENGLISH GRAMMAR. (3) Prerequisite: ENG 331 or 332. A descriptive analysis of the structure of Modern English, with emphasis upon the transformational approach.

ENG 465. SOCIAL DIALECTS. Prerequisite: ENG 332 or 461. An introduction to concepts of dialects, predominately in the United States, concentrating on social and class differentiations and incorporating some field-work experience within an interdisciplinary approach. Morphological, phonological and syntactic systems will be emphasized.

DEPARTMENT OF FOREIGN LANGUAGES

Chairman: Professor Gabriel
Professors: Bush, Saman, Slechta, Turner
Associate Professor: Gleaves, Merrill
Assistant Professors: Cernyak, Gonzales-Quevedo*, Hopper, McLeod, Reimer, Rose
Instructors: Park, Vance
Guest Lecturer: Watson**

Programs in each of the several foreign languages offered are designed to give a student competence in four skills—understanding, speaking, reading and writing the given language, to acquaint him with the culture and civilization of the country or countries where that language is spoken, especially their literature, and to give him some understanding of the people who speak it. Major programs include advanced linguistic analysis of sound systems and structure and are designed to prepare students for certification by the North Carolina State Department of Public Instruction or graduate work in the major field. Courses above the 202 level are normally taught in the foreign language.

Placement

The Department of Foreign Languages will recommend the placement of a student in a class of a level commensurate with his demonstrated competence at the time of enrollment considered together with his prior language training or experience.

Honors in Modern Languages

The honors program in foreign languages is open both to majors and non-majors who have demonstrated sufficient ability and interest to be capable of guided independent study outside the restrictions of regular course work. Reading for honors in a foreign language may begin as early as the second semester of a first-year course (102), providing the student has been enrolled at the University for at least one semester. Honors students who attain the language proficiency required for the 202 level may choose to read either in the literature or in the civilization of the target culture. Whenever feasible, arrangements are made for non-majors to read in the area of their special interest in cooperation with the department of their major.

Students are invited to enter honors work by recommendation of a member of the department to the Honors Committee for the language concerned. Once accepted for honors work within the department, a student must submit any proposal for a special honors project at least eight weeks prior to the semeter in which the work is to be done. A student may drop honors work at any time without penalty (See *University Honors Program*). However, he will not be permitted to reenter the program until the following semester and, in any case, not without review and approval by the Honors Committee.

* On leave of absence 1975-76
** Guest lecturer 1975-76

Laboratory

All foreign language courses at the 100 and 200 level, as well as those numbered 301 to 302, meet for three class hours and one to two hours of laboratory work per week. Whenever warranted, laboratory work may be assigned by the instructor in other courses.

SUGGESTED CURRICULUM LEADING TO A BACHELOR OF ARTS DEGREE IN A FOREIGN LANGUAGE

FRESHMAN YEAR

English 101	3	English 102	3
History 101	3	Mathematics/Elective	3
Foreign Language 201	4	History 102	3
Elective	6	Foreign Language 202	4
	—	Elective	3
	16		—
			16

SOPHOMORE YEAR

Foreign Language 301	3	Foreign Language 302	3
Literature Elective	3	Foreign Language 304	3
Science with lab	4	Science with lab	4
Social Science Elective	3	Math or Logic Elective	3
	—	Elective	3
	13		—
			16

JUNIOR YEAR

Foreign Language 303	3	Foreign Language 4xx	3
Foreign Language 331	3	Literature Elective	3
Creative Arts Elective	3	Philosophy or Comparative Religions	3
Social Science Elective	3	Elective	3
Elective	3	Elective	3
	—		—
	15		15

SENIOR YEAR

Foreign Language 4xx	3	Foreign Language 49x	3
Foreign Language 4xx	3	Creative Arts Elective	3
Foreign Language 309	3	Elective	3
Elective	3	Elective	3
Elective	3	Elective	3
	—		—
	15		15

SUGGESTED CURRICULUM LEADING TO A BACHELOR OF ARTS DEGREE IN A FOREIGN LANGUAGE, WITH CERTIFICATION IN SECONDARY SCHOOL TEACHING

FRESHMAN YEAR

English 101	3	English 102	3
History 101	3	Mathematics 101 (103)	3
Foreign Language 201	4	History 102	3
Elective	6	Foreign Language 202	4
	—	Elective	3
	16		—
			16

SOPHOMORE YEAR

English 201	3	English 202 (203, 204)	3
Foreign Language 301	3	Foreign Language 302	3
Education 201	3	Foreign Language 304	3
Social Science (1)	3	Mathematics or Logic	3
A Physical Science	4	A Biological Science	4
	—		—
	16		16

JUNIOR YEAR

Foreign Language 303	3	Foreign Language 4xx	3
Foreign Language 331	3	Foreign Language 4xx	3
Psychology 201	4	Creative Arts Elective	3
Social Science (1)	3	Psychology 202	3
Health Education 101	1	Foreign Languages 300	3
Elective	3		—
	—		15
	17		

SENIOR YEAR

Foreign Language 4xx	3	Education 304	3
Philosophy or Comparative Religions	3	Psychology 302	3
Foreign Language 309	3	Education 402	3
Foreign Language 49x	3	Education 451	6
Creative Arts Elective	3		—
Physical Education 101	1		15
	—		
	16		

FOREIGN LANGUAGES

FL 101. ELEMENTARY FOREIGN LANGUAGE. * (3-4)** Prerequisite: permission of the department. Fundamentals of grammar and phonetics, reading, writing and conversation.

FL 102. ELEMENTARY FOREIGN LANGUAGE. (3-4) Prerequisite: FL 101 or permission of the department. Continuation of FL 101.

FL 201. INTERMEDIATE FOREIGN LANGUAGE. (3-4) Prerequisite: FL 102 or permission of the department. Review grammar, conversation, composition and readings based on culture and civilization.

FL 202. INTERMEDIATE FOREIGN LANGUAGE. (3-4) Prerequisite: FL 201 or permission of the department. Review grammar, conversation, composition and readings based on students' needs.

FL 300. METHODS OF TEACHING A FOREIGN LANGUAGE. (2) Prerequisite: junior standing or permission of department. An investigaton into current trends and practices of foreign language teaching with special emphasis on practical applications. Readings, discussion, micro-teaching and observation of classroom situations at all levels. Required of all students seeking certification in the teaching of a foreign language.

FRENCH

The French major offers three options:

A. The French major leading to the B.A. degree consists of FRE 201, 202, 301, 302, 303, 304, 309, 331 and at least 12 hours on the 400 level, including FRE 491. Related work is to be approved by the department and is indicated in the Suggested Curriculum Leading to a Bachelor of Arts Degree in a Foreign Language.

B. The French major leading to a B.A. degree with secondary school teaching includes the same courses as A, and in addition all courses required for certification as indicated in the Suggested Curriculum Leading to a Bachelor of Arts Degree in a Foreign Language, with Certification in Secondary School Teaching. This program is worked out in collaboration with both the Department of Foreign Languages and the College of Human Development and Learning.

A or B is required for recommendation either to teaching or to graduate school.

* Languages offered under these courses are designated by alphabetical listing: A-Greek, B-Hebrew, C-Italian, D-Portuguese and E-Other.

** The number of hours credit for each course (3-4) is determined by the necessity or availability of a lab program.

C. The French major leading to a Bachelor's Degree in French for the non-professional consists of FRE 201, 202, 301, 302, 303, 304, 309, 331 and six hours of French at the 400 level. Candidates for a degree with certification in elementary school teaching may take option C.

COURSE DESCRIPTION

FRENCH

FRE 101. ELEMENTARY FRENCH. (4) Fundamentals of French grammar and phonetics, reading, writing and conversation. Three class hours and two hours of laboratory work per week.

FRE 102. ELEMENTARY FRENCH. (4) Prerequisite: FRE 101 or permission of the department. Continuation of FRE 101. Three class hours and two hours of laboratory work per week.

FRE 201. INTERMEDIATE FRENCH. (4) Prerequisite: FRE 102 or permission of the department. Review grammar, with composition and conversation based upon readings on French culture and civilization. Three class hours and two hours of laboratory work per week.

FRE 202. INTERMEDIATE FRENCH. (4) Prerequisite: FRE 201 or permission of the department. Review grammar, composition and conversation, based upon readings in French prose and poetry. Three class hours and two hours of laboratory work per week.

FRE 209. FRENCH CIVILIZATION. (3) Conducted in English. No knowledge of French required. Open to majors or non-majors for elective credit. A study of the French people, past and present, with emphasis on cross-cultural contrasts in attitudes and values.

FRE 301. ADVANCED FRENCH GRAMMAR, COMPOSITION AND CONVERSATION I. (3) Prerequisite: FRE 202 or permission of the department. For prospective teachers of French and students who want intensive oral and written work in the language. Oral reports and conversation on topics prepared from such sources as journals and newspaper articles.

FRE 302. ADVANCED FRENCH GRAMMAR, COMPOSITION AND CONVERSATION II. (3) Prerequisite: FRE 202 or permission of the department. Informal conversation on diversified prepared topics, newspaper and magazine articles. Students will be given maximum opportunity for self-expression. Book reports on collateral readings.

FRE 303. INTRODUCTION TO THE STUDY OF FRENCH LITERATURE. (3) Prerequisites: FRE 202 or permission of the department. Study of major works of French literature with emphasis on in-depth analyses of individual authors, works and related movements. Readings, discussions, presentations and *explications de texte.*

FRE 304. THE DYNAMICS OF FRENCH LITERATURE. (3) Prerequisite: FRE 301 or FRE 202 and permission of the department. A study of the sources and the evolution of literary forms, themes and symbols and of the interrelationships of literature, history and society as perceived in French literature. Lectures, oral reports and discussions.

FRE 309. FRENCH CIVILIZATION (3) Prerequisite: FRE 202 or permission of the department. A study of the French people, past and present. Special attention to cross-cultural contrasts in attitudes and values. Conducted in French.

FRE 331. FRENCH PHONETICS. (3) Prerequisite: FRE 202 or permission of the department. Study of the sounds of the French language, their production and their representation by means of the International Phonetic Alphabet. Practice in reading and speaking with proper rhythm and intonation. (May be repeated for credit with permission of the department.)

FRE 350. SELECTED TOPICS IN FRENCH. (3) Prerequisite: junior standing and consent of the department. Credit may be repeated.

FRE 360. FRENCH LITERATURE IN TRANSLATION. (3) Prerequisite: none. Study of selected works of major French writers translated into English. Available to French majors for elective credit only. May be repeated for credit with different content. Course conducted in English.

FRE 401. FRENCH LITERATURE OF THE TWENTIETH CENTURY. (3) Prerequisites: FRE 303 and 304 or permission of the department. Concentration on the principal authors and movements of the contemporary period.

FRE 403. FRENCH LITERATURE OF THE NINETEENTH CENTURY. (3) Prerequisites: FRE 303 and 304 or permission of the department. Concentration on the sources of nineteenth century literary ideas, the principal literary movements and the principal poets, dramatists, novelists and critics.

FRE 405. THE AGE OF ENLIGHTENMENT. (3) Prerequisite: FRE 303 or permission of the department. Major emphasis on "les philosophes," especially Montesquieu, Voltaire, Diderot and Rousseau.

FRE 408. THE SEVENTEENTH CENTURY. (3) Prerequisite: FRE 303 or permission of the department. Study of Pre-Classical and Classical trends in seventeenth century French literature. Emphasis on the work of major writers of the period: Descartes, Pascal, Corneille, Moliere, Racine, La Fontaine, Boileau and Mme de Lafayette. Outside readings and reports.

FRE 411. FRENCH-AFRICAN LITERATURE. (3) Prerequisite: FRE 302 or permission of the department. Study of French-African literature from the colonial period through the contemporary period. Course conducted in French.

FRE 417. FRENCH LITERATURE OF THE MIDDLE AGES. (3) Prerequisite: FRE 303 or permission of the instructor. Study of French literature from the *Chanson de Roland* to Francois Villon. Knowledge of the Old French Language is not a prerequisite but may be acquired by special arrangement with the department. Outside readings and reports.

FRE 418. FRENCH LITERATURE OF THE RENAISSANCE. (3) Prerequisite: FRE 303 or permission of the instructor. Study of French literature from 1480 to 1610. The influence of Humanism, Italianism and the Religious Wars on French literature. Emphasis on Rabelais, Ronsard and Montaigne. Outside readings and reports.

FRE 450. SPECIAL TOPICS IN FRENCH. (3) Prerequisite: two 300 courses or permission of the instructor. Treatment in depth of a special subject group of figure in French literature or French cluture. May be repeated for credit with change of topic.

FRE 491. SENIOR COLLOQUIUM. (3) Prerequisite: senior standing and permisson of the department. Special problems in the major field. Collateral readings and term papers. FRE 491 is required of all French majors.

GERMAN

A major in German consists of German 201, 202, 301 or 302, 309, 311, 403 or 404, 410, 420 and 491 plus three additional hours on the 300 or 400-level, or a total of 32 hours. In addition, 15 hours of related work, to be approved by the department chairman, will be required. Candidates for teacher certification must also take GER 331, making a total of 35 hours of work in the Foreign Languages Department required.

COURSE DESCRIPTIONS

GERMAN

GER 101. ELEMENTARY GERMAN. (4) Fundamentals of German grammar and phonetics, reading and conversation. Three class hours and two hours of laboratory work per week.

GER 102. ELEMENTARY GERMAN. (4) Prerequisite: GER 101 or permission of the department. Continuation of GER 101. Three class hours and two hours of laboratory work per week.

GER 201. INTERMEDIATE GERMAN. (4) Prerequisite: GER 102 or permission of the department. Review grammar, composition and conversation, based upon readings on the culture and civilization of German-speaking countries. Three class hours and two hours of laboratory work per week.

GER 202. INTERMEDIATE GERMAN. (4) Prerequisite: GER 201 or permission of the department. Continuation of GER 201. Review grammar, composition and conversation, based upon readings in German literature. Three class hours and two hours of laboratory work per week. Students who wish to continue with advanced offerings in German are advised to select GER 202.

NOTE: In GER 201 and 202, the student selects either the audio-visual laboratory (individual and group work with recorded and filmed materials supplementing classroom studies) or the "drama" laboratory (participation in the preparation and performance of a German drama).

GER 203. TECHNICAL GERMAN. (4) Prerequisite: GER 201. The student reads and prepares English translations of German publications in his major field of concentration. Not open to German majors.

GER 209. INTRODUCTION TO GERMAN LIFE AND THOUGHT. (3) Conducted in English. No knowledge of German required. Open to majors or non-majors for elective credit. A study of German life and thought, past and present.

GER 301. ADVANCED GERMAN GRAMMAR, COMPOSITION AND CONVERSATION. (3) Prerequisite: GER 202 or permission of the department. For prospective teachers of German and students who want intensive oral and written work in the language. Book reports on collateral readings. Three class hours per week and laboratory work as assigned by instructor.

GER 302. ADVANCED GERMAN GRAMMAR AND COMPOSITION. (3) Prerequisite: GER 202 or permission of the department. Intensive review of German grammar. Discussion of prepared topics drawn from readings. Book reports on readings. Three class hours per week and laboratory work as assigned by instructor.

GER 309. GERMAN CIVILIZATION. (3) Prerequisite: GER 202 or permission of the department. Composition and conversation based on readings in the culture, civilization, art and literature of German speaking countries.

GER 311. TOPICS IN GERMAN STUDIES. (1-3) Prerequisite: GER 202 or permission of the department. Book reports and discussions on collateral readings. Changing topic: a) Short prose fiction, b) The radio play, c) Folk music and folk literature, d) Methods in the study of literature, e) Structure of Modern Standard German, f) Twentieth Century Germany as reflected in literature, and other topics. May be repeated for major credit as topic changes.

GER 331. GERMAN PHONETICS. (3) Prerequisite: GER 202 or permission of the department. Study of the sounds of the German language, their production and their representation by means of the International Phonetic Alphabet. Practice in reading and speaking with proper rhythm and intonation. Three class hours and two hours of laboratory work per week. Transcription exercises and student recordings.

GER 360. GERMAN LITERATURE IN TRANSLATION. (3) For non-majors. Prerequisite: sophomore standing; knowledge of German not required. May be taken for elective credit by German majors. Reading and discussions of selected works of German literature of topical interest to the student. May be repeated as topic changes.

GER 403. SURVEY OF GERMAN LITERATURE. I (3) Prerequisites: two 300-level courses (not 360) or permission of the department. General introduction to German literature from the Middle Ages to the Classical Period. Book reports and class discussion on collateral readings.

GER 404. SURVEY OF GERMAN LITERATURE II. (3) Prerequisite: two 300-level courses (not 360) or permission of the department. German literature since Classicism. Book reports and discussion on collateral readings.

GER 410. PERIODS IN THE HISTORY OF GERMAN LITERATURE: (3) (a) Medieval literature (b) Classicism (c) Romanticism (d) Contemporary Literature. Prerequisite: two 300-level courses (not 360) or permission of the department. Study of the major writers and works in a given period. Readings, lectures and reports. May be repeated for major credit as topic changes.

GER 420. THE CHIEF GENRES IN GERMAN LITERATURE (3) (a) The novel (b) The drama (c) Lyric poetry. Prerequisite: two 300-level courses (not 360) or permission of the department. An analysis of a major genre and its development within German literary history. Readings, lectures and reports. May be repeated for major credit as topic changes.

GER 491. SENIOR COLLOQUIUM. (3) Prerequisites: senior standing and permission of the department. Comprehensive review of the major field, with special attention to the individual needs of the student. Lectures, discussions and reports.

COURSE DESCRIPTIONS

RUSSIAN

RUS 101. ELEMENTARY RUSSIAN. (4) Fundamentals of Russian grammar and phonetics, reading and conversation. Three class hours and two hours of laboratory work per week.

RUS 102. ELEMENTARY RUSSIAN. (4) Prerequisite: RUS 101. Continuation of RUS 101. Graded readings. Three class hours and two laboratory periods a week.

RUS 201. INTERMEDIATE RUSSIAN. (4) Prerequisite: RUS 102 or permission of the department. Review grammar, with conversation and composition based upon readings in Russian culture and civilization. Three class hours and two hours of laboratory work per week.

RUS 202. INTERMEDIATE RUSSIAN. (4) Prerequisite: RUS 201 or permission of the department. Continuation of grammar, conversation and composition skills, based on readings in Russian literature. Three class hours and two hours of laboratory work per week.

RUS 495. SEMINAR IN SLAVIC LINGUISTICS. (2) Study of morphology semantics, phonology and general grammar of Russian and other Slavic languages—Bulgarian, Czech, Polish, Serbo-Croatian, Slovak and Ukranian. Class meeting once a week for two hours. Prerequisite: RUS 102 or the permission of the department.

SPANISH

A major in Spanish leading to the B.A. degree consists of Spanish 201, 202, 301, 302, 303, 304, 309 or 310, and 12 hours of Spanish courses on the 400 level, including Spanish 491. Spanish 311 or 312 may be substituted for 304.

COURSE DESCRIPTIONS

SPANISH

SPA 101. ELEMENTARY SPANISH. (4) Introduction to Spanish with emphasis on auditory comprehension, oral producton and control of structure. Three hours of class and two hours of laboratory per week.

SPA 102. ELEMENTARY SPANISH. (4) Continuation of SPA 101, with greater attention to reading and writing. Three hours of class and two hours laboratory per week.

SPA 201. INTERMEDIATE SPANISH. (4) Prerequisite: SPA 102 or permission of department. Reinforcement and expansion of skill mastery developed in elementary courses on basis of grammar review and conversation. Three hours of class and two hours laboratory per week.

SPA 202. INTERMEDIATE SPANISH. (4) Prerequisite: SPA 201 or permission of department. Extensive practice in oral and written control of the language on basis of readings from Spanish or Spanish-American literature. Three hours of class and two hours of laboratory per week.

SPA 209. LITERATURE OF THE HISPANIC WORLD IN TRANSLATION. (3) Prerequisite: none. Studies of Spanish or Spanish American literature in translation. Not available to Spanish majors for credit toward major but may be taken for elective credit. May be repeated for credit. Course conducted in English.

SPA 301. ADVANCED GRAMMAR AND COMPOSITION. (3) Prerequisite: SPA 202 or permission of the department. For prospective teachers of Spanish and students who want intensive oral and written work in the language. Both written and oral compositon. Reports on collateral reading. Two hours of class and two hours laboratory per week. Course conducted in Spanish.

SPA 303. INTRODUCTION TO SPANISH LITERATURE I. (3) Prerequisite: SPA 202 or permission of department. Reading and analysis of representative master works of Spanish literature from its origins through the Golden Age. Course conducted in Spanish.

SPA 304. INTRODUCTION TO SPANISH LITERATURE II. (3) Prerequisite: SPA 202 or permission of department. Continuation of SPA 303 with emphasis on literature of the nineteenth and twentieth centuries. Course conducted in Spanish.

SPA 309. SPANISH CIVILIZATION AND CULTURE. (3) Prerequisite: SPA 202 or permission of department. An overview of the cultural heritage of peninsular Spain. Lecture, discussion, recitation on basis of assigned readings. Course conducted in Spanish.

SPA 310. SPANISH AMERICAN CIVILIZATION AND CULTURE. (3) Prerequisite: SPA 202 or permission of department. An introduction to the cultural heritage of the Spanish American countries. Lecture, discussion, recitation on the basis of assigned readings. Course conducted in Spanish.

SPA 311. SPANISH AMERICAN LITERATURE I. (3) Prerequisite: SPA 202 or permission of the department. Survey of Spanish American literature from the Colonial period through Romanticism. Lectures, discussion and reports on the basis of assigned readings. Course conducted in Spanish.

SPA 312. SPANISH AMERICAN LITERATURE II. (3) Prerequisite: SPA 202 or permission of the department. Survey of Spanish American literature from Modernism through the contemporary period. Lectures, discussions and reports on the basis of assigned readings. Course conducted in Spanish.

SPA 331. SPANISH PHONETICS. (3) Prerequisite: SPA 202 or permission of department. Detailed analysis of description and production of Spanish sounds. Practical exercises to include phonetic transcription and recordings. Two hours of class and two hours of laboratory a week.

SPA 350. SELECTED TOPICS IN SPANISH. (3) Prerequisite: junior standing or consent of the department. Credit may be repeated.

SPA 401. NINETEENTH CENTURY SPANISH LITERATURE. (3) Prerequisite: two 300-level courses or permission of the department. Survey of peninsular literature from Costumbrismo through the Generation of 1898. Lectures, discussions and reports on basis of extensive collateral reading. Course conducted in Spanish.

SPA 402. TWENTIETH-CENTURY SPANISH LITERATURE. (3) Prerequisite: two 300-level courses or permission of department. Treatment of major literary developments from the Generation of 1898 to the present day. Lectures, discussions and reports on the basis of extensive collateral readings. Course conducted in Spanish.

SPA 405. THE GOLDEN AGE OF SPANISH LITERATURE I. (3) Prerequisite: two 300-level courses or permission of department. El Lazarillo through El Criticon. Lecture, discussion and reports on basis of extensive collateral reading. Course conducted in Spanish.

SPA 406. THE GOLDEN AGE OF SPANISH LITERATURE II. (3) Prerequisite: two 300-level courses or permission of department. Study of works of the leading dramatists of the period. Lectures, discussions and reports on basis of extensive collateral readings. Course conducted in Spanish.

SPA 411. STUDIES IN SPANISH AMERICAN PROSE FICTION. (3) Prerequisite: two 300-level courses or permission of the department. Studies of nineteenth and twentieth century Spanish American prose fiction. Course conducted in Spanish.

SPA 412. STUDIES IN SPANISH AMERICAN POETRY AND DRAMA. (3) Prerequisite: two 300-level courses or permission of the department. Studies of nineteenth and twentieth century Spanish American drama and/or poetry. Course conducted in Spanish.

SPA 413. DON QUIJOTE. (3) Prerequisite: two 300-level Spanish courses or permission of the department. In-depth study of Cervantes' masterpiece, which is considered by many critics to be the basis of the modern Western novel. Course conducted in Spanish.

SPA 450. SELECTED READINGS IN SPANISH. (3) Prerequisite: two 300-level courses or permission of the department. Consideration in depth of a predetermined author or literary movement. Course conducted in Spanish.

SPA 491. SENIOR COLLOQUIUM. (3) Prerequisite: senior standing and permission of the department. Comprehensive review of the major field.

Acting Chairman: Professor Wrigley
Professors: Abernathy, Hall (Emeritus), Morrill, Rieke
Associate Professors: Davis, Josephson, Perzel, Ploger
Assistant Professors: Dunkley, *Escott, Johnson, *Monkkonen, Patterson
Lecturers: Farlowe, Mullins, Rossbach, Strobel
(part-time) Frech, Reichard

A major in history leading to the B.A. degree, except for students in a teacher certification program, consists of 30 hours of history. Without the special permission of the chairman of the department, no more than 12 of these hours may be at the 100 level and carry credit for the major. Three semester hours must be taken at the 400 level. Related work consists of 15 hours of approved work in a discipline other than history, including the option of 15 hours of related work in a multi-disciplinary area, such as International Studies, Black Studies, Women's Studies, and American Studies.

A major in history leading to the B.A. degree and secondary teacher certification consists of 27 hours of history. Without the special permission of the chairman of the department, no more than 12 of these hours may be at the 100 level and carry credit for the major. Three semester hours must be at the 400 level (HIS 490 and HIS 492 are recommended.) Related work consists of either 15 hours of approved work in one discipline or 21 hours evenly distributed among three of the social sciences (anthropology, economics, geography, political science, and sociology), which will qualify the student for certification in social studies. In addition the candidate for secondary certification must complete the course of study listed in the Human Development and Learning section of this catalog.

A major in history leading to the B.A. degree and an intermediate teaching certificate consists of 24 hours in history and approved related work consistent with the state guidelines for intermediate certification. In addition the candidate must complete the course of study listed in the Human Development and Learning section of this catalog.

A major in history leading to the B.A. degree and a K-3 teaching certificate consists of 24 hours in history and the course of study listed in the Human Development and Learning section of this catalog.

Curricula for teacher certification candidates must also be approved by the College of Human Development and Learning.

The Honors Program in History

The History Department offers an honors program as well as individual honors courses. Both history majors and non-majors are welcome to participate. A brochure fully outlining the honors program is available in the history office. Study abroad in Asia, Africa, Europe, Latin America or Canada can be arranged.

* On leave Academic Year 1975-1976.

HISTORY

Courses primarily for lower division students:

HIS 101. EARLY MODERN EUROPE. (3) A survey of European history and civilization from the Renaissance to 1815.

HIS 102. MODERN EUROPE. (3) A survey of European history and civilization from 1815 to the present.

HIS 103. AMERICAN HISTORY I. (3) Survey of American history from the earliest times to 1865.

HIS 104. AMERICAN HISTORY II. (3) Survey of American history from 1865 to the present.

HIS 105. ANCIENT HISTORY. (3) From the earliest civilization until the fourth century A.D.

HIS 106. MEDIEVAL HISTORY. (3) Political and cultural developments from the late Roman Empire until the Renaissance.

HIS 107. ASIAN HISTORY. (3) A survey of the major contributions of the Asian world until the modern period.

HIS 108. MODERN ASIA. (3) A continuation of History 107 with a special focus on the rise of Asian nationalism and the emergence of Asia into the modern world.

HIS 109. HISTORY OF LATIN AMERICA I. (3) A survey of the cultural, political and economic developments of Latin America during the colonial period.

HIS 110. HISTORY OF LATIN AMERICA II. (3) A survey of the cultural, political and economic developments of Latin America during the national period. A special focus will be placed on the rise of nationalism and revolutionary movements.

HIS 111. AFRICAN HISTORY I. (3) Sub-Saharan Africa from earliest times to the nineteenth century.

HIS 112. AFRICAN HISTORY II. (3) Sub-Saharan Africa in the nineteenth and twentieth centuries.

HIS 113. HISTORY-FILM. (3) Treatment of an historical topic, problem or theme. Students may receive credit toward graduation for more than one course under this rubric. History majors may receive credit toward the fulfillment of the hours for a major from only one course under this rubric.

HIS 113A: Kenneth Clark's *Civilisation.* An interdisciplinary humanistic introduction to European cultural history. The progress of European civilization as demonstrated by its art, architecture, music and literature. The 13-film *Civilisation* series supplemented by lectures from 14 humanists. Assigned readings, essays and journals required.

HIS 113B: *Ascent of Man.* A multi-disciplinary introduction to the history of social and physical science based upon the *Ascent of Man* by Jacob Bronowski. Films supplemented by lecturers from 13 scientific disciplines. Assigned readings and reports required.

HIS 250. TOPICS AND HONORS IN HISTORY. (3) Prerequisite: consent of instructor in case of honors. Treatment of an historical topic. May be repeated for credit.

Courses primarily for upper division students:

HIS 301. THE EARLY MIDDLE AGES (312 A.D.-1066 A.D.). (3) Western Europe from Constantine to the Norman Conquest. A study of Christianity, the "Fall of Rome," the Germanic kingdoms, Islam, and the Carolingian and Ottonian empires.

HIS 302. THE HIGH AND LATER MIDDLE AGES (1056 A.D.-1349 A.D.) (3) Western Europe from the struggle between the empire and the papacy to the Black Death. A study of the crusades, origin of towns, parliaments, the middle class, universities, the secularization and centralization of governments.

HIS 303. HISTORY OF GREECE. (3) From the beginning of civilization in Greece to 323 B.C.

HIS 304. HISTORY OF ROME. (3) From the beginning of civilization in Italy to 284 A.D.

HIS 305. EUROPE IN THE AGE OF THE RENAISSANCE AND REFORMATION. (3) The breakdown of the Medieval political, religious, and cultural synthesis, and the recognition of man and the individual as the principal concerns of human experience.

HIS 306. THE EUROPEAN WORLD IN THE ERA OF THE FRENCH REVOLUTION. (3) The role of the Enlightenment, the French Revolution and Napoleon in the destruction of the Old Regime and the creation of modern political and social traditions.

HIS 309. NINETEENTH CENTURY EUROPE, 1814-1914. (3) A survey of the major political developments in European history from the Congress of Vienna. Emphasis will be placed on liberalism, nationalism, imperialism and the diplomatic agreements leading to World War I.

HIS 310. TWENTIETH CENTURY EUROPE, 1914 TO THE PRESENT. (3) A review of the causes and results of World War I, followed by an intensive study of the problems of peace, rise of new

governments, collapse of collective security, World War II and the postwar period.

HIS 311. RUSSIAN HISTORY FROM EARLIEST TIMES TO 1801. (3) A survey of the development of the Russian people, focusing upon the rise and fall of the Kievan state, the impact of the period of Tartar domination, the rise of Muscovy, and the growth of Tsarist autocracy before the reign of Alexander I.

HIS 312. RUSSIAN HISTORY FROM 1801 to 1917. (3) A survey of the decline and fall of the Tsarist empire, focusing upon the efforts of the last four rulers to perpetuate the monarchy and upon the factors working against the effort.

HIS 313. RUSSIAN HISTORY FROM 1917 TO THE PRESENT. (3) A survey of the development of Soviet Russia, focusing upon the October, 1917 Revolution, Lenin's years of rule, Stalin's rise to power, the Five Year Plan and the years since World War II.

HIS 314. HISTORY OF SOCIALISM AND COMMUNISM. (3) A broad treatment of the intellectual roots, major personalities and overall development of socialism before the establishment of the First International, followed by an in-depth survey and analysis of the international socialist and communist movements until the present day.

HIS 315. A MILITARY HISTORY OF WORLD WAR II. (3) An analytical and descriptive treatment of the major campaigns of World War II with emphasis upon the European theater of operations.

HIS 321. THE BYZANTINE EMPIRE (330 A.D.-1054 A.D.). (3) A study of the continuation of the Roman Empire from the establishment of Constantinople to the separation of Greek East and Latin West.

HIS 322. THE LATER BYZANTINE EMPIRE (1054-1453 A.D.). (3) A study of the struggle against Arab, Turk and Latin invaders; the Slavs, the role of Byzantium in relation to the economic revolution of Western Europe and to the Italian Renaissance.

HIS 329. DISEASE AND MEDICINE IN HISTORY. (3) The development of medical knowledge, trends in the techniques and availability of medical and psychiatric care, and the impact of disease and medicine on selected problems in world history.

HIS 330. WEST AFRICA TO 1850. (3) A study of selected coastal and Sudanic societies in the pre-colonial period; their origins, development and interactions with North Africa and Europe.

HIS 331. WEST AFRICA SINCE 1850. (3) A study of the establishment of colonial regimes, social and political change in the colonial period, and the triumph of African nationalism.

HIS 332. SOUTH AFRICA. (3) A study of the major population groups of South Africa from earliest times to the present. Emphasis on

the assertion and maintenance of European rule in the nineteenth and twentieth centuries.

HIS 335. THE EARLY HISTORY OF JAPAN. (3) The development of the Japanese people and state from the neolithic to the late feudal period (17th century) with emphasis on the development of social institutions and values, Japanese Buddhism, Shinto, literature and political and economic history.

HIS 336. HISTORY OF MODERN CHINA. (3) A study of the last 200 years of history with main emphasis on the history of the Chinese Revolution and the post-1949 developments.

HIS 337. HISTORY OF MODERN JAPAN. (3) The history of Japan from about 1600 to the present covering Japan's intellectual, social and economic transformation from an agricultural society to an industrial power.

HIS 338. THE WEST IN ASIA: IMPERIALISM, COLONIALISM AND MODERN NATIONALISM. (3) A study of Western expansion in Asia beginning with the East India companies and the early colonial empires of the sixteenth through eighteenth centureis with concentration on modern imperialism in the nineteenth and twentieth centuries.

HIS 340. HISTORY OF ARGENTINA. (3) A survey of Argentine history from the late colonial period to the present. Emphasis will be placed on changes in Argentine economic and social structures and their relation to political developments.

HIS 341. ASPECTS OF COLONIAL LATIN AMERICA. (3) This is a topics course that will treat selected specialized areas of colonial history on a rotational basis. It may be repeated for credit when the subject matter is changed. Topics will include: Spanish society, the Indian in Latin America, the city in Latin America, and the Eighteenth Century Revolution.

HIS 342. MEXICO AND CUBA IN THE 20TH CENTURY. (3) The social and economic forces leading to the revolutionary outbreaks of 1910 and 1953 and the political contexts in which they occurred. Special emphasis will be placed on post-revolutionary developments in each country.

HIS 350. TOPICS AND HONORS IN HISTORY. (3) Treatment of an historical topic. May be repeated for credit.

HIS 361. BRITAIN TO 1485. (3) Survey of British history with emphasis on institutional, cultural, economic, and imperial developments.

HIS 362. MODERN BRITAIN, 1485-1789. (3) Continuation of History 361 with some treatment of the British Empire.

HIS 363. MODERN BRITAIN AND THE BRITISH EMPIRE SINCE 1789. (3) Continuation of History 362 with greater emphasis on the Empire and the Commonwealth.

HIS 367. FRANCE IN THE MODERN WORLD. (3) French social, political and cultural history from Waterloo to De Gaulle.

HIS 369. GERMANY SINCE 1850. (3) Unification, the Wilhelmine Empire, the Weimar Republic, the Third Reich and the two Germanies.

HIS 370. PORTUGAL AND ITS EMPIRE, 1415 TO PRESENT. (3) A survey of the rise and fall of Portugal as a world power, with emphasis on the empire in Asia, America, and Africa.

HIS 371. COLONIAL AMERICA. (3) Colonial history from the discoveries to 1763.

HIS 372. THE AMERICAN REVOLUTION AND EARLY NATION. (3) The achievement of independence and the formation of a national government, 1763-1800.

HIS 374. AMERICA IN CRISIS, 1824-1860. (3) A consideration of the new American nation in crisis. Attention is given to the development of nationalism under Jackson, the expansion of the new nation, the growth of sectionalism, and the events leading to secession.

HIS 375. CIVIL WAR AND RECONSTRUCTION, 1860-1877. (3) A study of the American people in war and postwar adjustment. Emphasis is placed on the political, social and economic conditions of the North and South during the Civil War and Reconstruction period.

HIS 377. AMERICA IN THE TWENTIETH CENTURY, 1901-1932. (3) An intensive study of the political, economic, social and intellectual aspects of American democracy from 1901 to the Great Depression. Special emphasis on the impact of industrialization, American reform and the entry of the United States into the international arena.

HIS 378. AMERICA IN THE TWENTIETH CENTURY, 1932-PRESENT. (3) An intensive study of the political, economic, social and intellectual aspects of American democracy from the New Deal to the Great Society. Special emphasis on the New Deal and post-New Deal reform as well as America's role in world affairs.

HIS 379. HISTORY OF THE SOUTH TO 1865. (3) A survey of the South from colonial origins through the Civil War. Emphasis is placed on the political and cultural developments which ultimately led the South to secession and the creation of a distinct Southern nation in the confederacy.

HIS 380. HISTORY OF THE SOUTH SINCE 1865. (3) A survey of Southern history from Reconstruction to the present. Emphasis is placed on the political and cultural developments of the South and its attempt to maintain its biracial system. Attention is given to the

development of the New South, the emergence of the Southern demagogue, the origins of segregation, and the region's attempt to deal with integration since 1954.

HIS 383. URBAN HISTORY. (3) A one-semester introduction to recent concepts and research in U.S. urban history. The city as a physical place, as a socio-political environment, and as a cultural center. Emphasis is placed on the social developments caused by urbanization.

HIS 384. CRIME AND THE POLICE. (3) An emphasis upon the historical development of criminal behavior, criminal law, the criminal courts, the police and the penitentiary system. English origins are related to nineteenth and early twentieth century U.S. systems.

HIS 386. AMERICAN FOREIGN RELATIONS, 1901-PRESENT. (3) A study of American diplomatic history from the administration of Theodore Roosevelt to the present. Special emphasis will be placed upon the interaction between domestic, economic, political and social changes and the formulation of American foreign policy.

HIS 391. HISTORY OF NORTH CAROLINA. (3) Emphasis on the colonial developments and on the constitutional, educational and transportation developments of the ante-bellum period.

HIS 393. THE FRONTIER IN AMERICAN HISTORY. (3) A study of the influence of the moving frontier line on the historical development of the United States. Emphasis will be placed on the trans-Mississippi Western United States. For comparative purposes some consideration will be given to other world frontiers.

Courses for advanced undergraduates:

HIS 411. PROBLEMS IN HISTORY. (3) A colloquium designed around a problem in history, utilizing reading, discussion, reports and short papers. Topics vary within the fields of American, European, Latin American, African and Asian history. May be repeated for credit.

HIS 414. AMERICAN SOCIAL AND INTELLECTUAL HISTORY TO 1860. (3) Development of American social institutions and thought from the beginning to the Civil War. The course is conducted as a colloquium, combining lectures, discussions, extensive reading and oral reports and a research paper by each student.

HIS 415. AMERICAN SOCIAL AND INTELLECTUAL HISTORY SINCE 1860. (3) Continuation of HIS 414 from the Civil War to the present.

HIS 416. RECENT AMERICAN RADICALISM. (3) Radical thought and action in the United States since 1890. Emphasis on Marxian-Socialism, Black and labor radicalism, radical women, and the new Left movement.

HIS 450. SENIOR HONORS THESIS. (3) Prerequisite: consent of the instructor. The preparation and presentation of an acceptable honors thesis or its equivalent.

HIS 490. THE NATURE OF HISTORICAL STUDY. (3) A course which examines the historian, his history, presuppositions, methods and objectives.

HIS 492. SEMINAR IN HISTORY. (3) Prerequisite: consent of the department. An intensive examination of a subject in history. May be repeated for credit.

HUMANITIES

HUM 301. THE MEANING OF DEATH. (3) An investigation into the experience of death in the western tradition. Study of selected philosophical, religious, existential, psychological and literary readings with a view of clarifying the conceptual problems involved in our ways of speaking about death. Explorations into the understanding of death as a horizon for understanding life.

HUM 350. TOPICS IN HUMANITIES. (3) (May be repeated for credit with consent of the student's major department.) Prerequisite: junior standing and consent of the sponsoring departments. Topics chosen from the general area of the humanities in order to demonstrate relationships and interdisciplinary influences.

HUM 450. NON-RESIDENTIAL STUDIES. (1 to 15 hours). Experience outside the University arranged cooperatively by the student and his major department in the College of Humanities for the purpose of applying, extending, adding to, or elaborating the student's studies in his major. (Arrangements will include a written and approved proposal for the goals, methods, duration, hour-credit and evaluation of the project.) To be supervised and evaluated by the student's major department (with the cooperation of others as appropriate). Grading may be on a pass/fail basis. Ordinarily to be taken no earlier than the junior year.

DEPARTMENT OF PHILOSOPHY

Chairman: Professor Shumaker
Associate Professor: Fishman
Assistant Professors: Lincourt, Presler, Toenjes
Instructor: Cook

A major in philosophy consists of a minimum of 28 semester hours in philosophy and includes courses 201, 205, 302, 303 and two senior seminars. Additional work is to be chosen from other philosophy offerings.

Required related work consists of 15 hours, such work to be chosen in consultation with the department representative or adviser. Students contemplating graduate study in philosophy are encouraged to undertake related work in the natural or physical sciences and to develop reading proficiency in German and French.

COURSE DESCRIPTIONS

PHILOSOPHY

PHI 201. INTRODUCTION TO PHILOSOPHY. (3) An introduction to some of the basic concepts and problems of philosophy. Typical problems are freedom and determinism, mind-body interaction, the status of moral judgments and the problem of perception. Readings from the works of representative philosophers both classical and contemporary.

PHI 205. DEDUCTIVE LOGIC. (3) A first course in the general principles of deductive logic, both classical and symbolic, with emphasis on the use of formal logic in analysis of ordinary language discourse.

PHI 301. ETHICS. (3) A study of the development of ethical thought in ancient and modern times, with special references to present day ethical problems. Readings selected from classical and contemporary sources.

PHI 302. ANCIENT PHILOSOPHY. (3) Prerequisite: PHI 201 or junior standing. An inquiry into the history of Western intellectual and philosophic thought from the early Greeks to the post-Aristotelian period. Readings from the pre-Socratics, Plato, Aristotle, Epicureans, Stoics, Skeptics and Neoplatonists.

PHI 303. MODERN PHILOSOPHY FROM DESCARTES TO KANT. (3) Prerequisite: PHI 201 or junior standing. An inquiry into the development of modern philosophic and scientific thought. Readings selected from respective works in the seventeenth to the nineteenth centuries.

PHI 305. CONTEMPORARY PHILOSOPHY. (3) Prerequisite: PHI 201. A study of the main movements and problems of contemporary

philosophy: pragmatism, logical positivism, linguistic analysis, existentialism.

PHI 325. AESTHETICS. (3) Prerequisite: PHI 201 or junior standing. A study of the major theories of art, including readings from Aristotle, Kant, Nietzsche, Santayana, Collingwood, Croce and Dewey. Emphasis is on the following categories: expression, criticism, the work of art, the creative process.

PHI 350. TOPICS. (3) May be repeated for additional credit with the approval of the department. Prerequisite: consent of the department. Topics chosen from specific areas in philosophy such as symbolic logic, philosophy of science, freedom and determinism, philosophy in literature, detailed study of significant philosophic movements or detailed study of the works of individual philosophers.

PHI 365. THEORY OF KNOWLEDGE. (3) Prerequisite: PHI 201. An analysis of the concepts of meaning, belief, knowledge, truth and discussion of the analytic-synthetic distinction. Readings from historical and contemporary sources.

PHI 375. METAPHYSICS. (3) Prerequisite: PHI 201. An investigation of the history of metaphysics, focusing on the concept of experience. Authors to be discussed include Aristotle, Hume, Lewis, Hegel, James Peirce, Dewey and Whitehead.

PHI 401. PHILOSOPHY OF RELIGION. (3) Prerequisites: PHI 201 and junior standing. A discussion of the philosophical implications of religious experience. The definitions, development and diverse forms of the problems of belief and reason in modern thought.

PHI 402. PHILOSOPHY OF THE EAST. (3) Prerequisite: six hours of philosophy. A survey of thought in the East from ancient to modern times. Special emphasis on the philosophical concepts of Hinduism, Buddhism, Confucianism and Taoism.

PHI 425. AMERICAN PHILOSOPHY. (3) Prerequisite: PHI 201 or junior standing or consent of the instructor. A survey of European philosophic movements which had counterparts in American thought, leading to distinctively American Pragmatism, Realism and Humanism. Readings from contemporary American philosophers.

PHI 445. PHILOSOPHY OF MIND. (3) Prerequisite: PHI 201. A study of the conceptual issues in the mind body problem and the problem of other minds. Analysis of concepts of intention, motivation, consciousness, imagination and emotion.

PHI 491. SEMINAR. (2) Prerequisite: consent of the department. Individual or group inquiry into selected philosophic problems. Exposition and discussion of the results.

PHI 492. SEMINAR. (2) Prerequisite: consent of the department. A continuation of PHI 491.

Chairman: Professor Underwood
Professor: Witherspoon
Associate Professors: Capps, St. Clair
Assistant Professors: Gestwicki, Meyer, Thomas
Instructor: White

A student may satisfy the requirements for a major in religious studies after completing nine hours in the area of Introductory Religious Studies (normally including Religion 203 and 204) in one of the two following programs:

(A) *Course program in religious studies:* A student who elects this option will satisfy the requirements for a major in religious studies by completing a minimum of 18 hours of upper-level religious studies courses with at least one course from each of the areas of Eastern Religious Thought, Judeo-Christian Thought, and Religion and Culture.

(B) *Interdisciplinary program in religious studies:* This option is intended to provide a course of studies which will make maximum use of the interdisciplinary aspects inherent in religious studies. Before the beginning of the junior year, a student may submit a proposal for a program of study for his junior and senior years. If the proposal is approved by the department, the student will satisfy the requirement for a major in religious studies by completing his approved program rather than by taking any specified number of religious studies courses. This is not an honors program, and any student may submit a proposal to the department. A detailed description of this program may be obtained at the departmental office.

COURSE DESCRIPTIONS

RELIGIOUS STUDIES

Introductory Religious Studies

Religious Studies 201, 202, 203 and 204 are separate courses and may be taken in any order without prerequisite.

REL 201. HEBREW RELIGIOUS THOUGHT. (3) An introduction to the Hebrew religious tradition from the perspective of its development in the culture of the ancient Near East and from the perspective of its subsequent impact on Western culture. Analysis of selected Hebrew Scriptures and other writings from the Jewish tradition in English translation.

REL 202. ORIGINS OF CHRISTIANITY. (3) A study of the emergence of Christianity in its cultural context. Analysis of selected early Christian writings in English translation.

REL 203. EASTERN RELIGIONS. (3) An introduction to selected religions of the East such as Islam, Hinduism, Buddhism, Chinese and Japanese religions. Special emphasis on their world views as expressed in the functional use of myth and symbol in the traditions.

REL 204. RELIGION AND CONTEMPORARY CULTURE. (3) An introduction to the critical study of the religious dimension of human existence. Attention given to the function of myth, symbol and artistic imagination in the development of religious sensibilities and to the impact of modern scientific and cultural forms on contemporary religious thought and action.

Eastern Religions

REL 311. HINDUISM. (3) Prerequisite: REL 203 or consent of the instructor. A study of the ancient Vedic traditions and the development of Hinduism. Emphasis placed on the role of Hinduism in the development of Indian civilization.

REL 312. BUDDHISM. (3) Prerequisite: REL 203 or consent of the instructor. The historical development of Buddhism with special attention given to its diverse manifestations in South Asia.

REL 313. TAOISM. (3) A study of Chinese religious traditions, concentrating on Taoism in its philosophical formulations (Lao Tzu, Chuang Tzu) as well as its development in meditation, yoga, alchemy and ritual orthodoxy.

REL 314. ISLAM. (3) Prerequisite: REL 203 or consent of the instructor. A study of the development of the traditions in Islam with special emphasis on Islamic culture, literature and mysticism.

REL 315. VISUAL MYSTERIES OF INDIA. (3) Prerequisites: REL 203 or consent of instructor. A study of the visual expressions of Hindus, Buddhists, Jainas and Muslims in the caves, temples, paintings and sculptures of India. Discussions include a historical study of various types of art, the moods these visual images express and create in the worshipper, the nature of illusion in Indian religious imagery and the ideas of Indian aesthetics.

REL 316. ZEN BUDDHISM. (3) A study of Buddhist origins in India, development of the Ch'an (Zen) School in China and Japan, with special emphasis on the formative influences of Zen on Japanese art and culture.

REL 411. TIBETAN RELIGION. (3) Prerequisite: REL 203 or consent of instructor. A study of the symbols, beliefs and practices of the Tibetan tradition, which grew out of the fusion of the ancient native religion and Buddhism.

REL 419. SEMINAR: EASTERN RELIGIONS. (3) Prerequisite: consent of instructor. An intensive investigation of a special topic in the area of Eastern religions.

Judeo-Christian Thought

REL 321. HEBREW PROPHETIC RELIGION. (3) Prerequisite: REL 201 or consent of the instructor. The historical development of the prophetic movement from its origins to its culmination in the classical prophets of the eighth to the sixth centuries B.C. Emphasis placed on the contributions of the prophets to their own day and their significance for contemporary religious thought.

REL 322. THE PSALMS AND WISDOM LITERATURE OF ISRAEL. (3) Prerequisite: REL 201 or consent of the instructor. A study of the origin and content of the Psalms and a study of the place of wisdom literature in the development of Hebrew thought.

REL 324. CHRISTIAN ORIGINS: JESUS. (3) Prerequisite: REL 202 or consent of the instructor. An intensive study of the synoptic gospels for an understanding of Jesus and the religion he taught.

REL 325. CHRISTIAN ORIGINS: PAUL. (3) Prerequisite: REL 202 or consent of the instructor. A detailed analysis of the Pauline corpus. Particular reference is made to the occasion, purpose and significance of each letter for the emerging Christian community.

REL 327. JUDAISM. (3) Prerequisite: junior standing or consent of the instructor. A systematic survey of the development of Jewish religious thought from the Middle Ages to the present. Reading from Maimonides, Buber and others.

REL 328. MODERN CHRISTIAN THOUGHT. (3) Prerequisite: junior standing or consent of the instructor. A study of the contributions of the major creative thinkers who have interpreted the Christian tradition in the context of the modern world. Readings selected from such figures as Schleiermacher, Kierkegaard, Barth, Tillich, Rahner and Ong.

REL 429. SEMINAR: JUDEO-CHRISTIAN THOUGHT. (3) Prerequisite: consent of the instructor. An intensive investigation of a special topic in the area of Judeo-Christian thought.

Religion and Culture

REL 331. RELIGION IN AMERICAN CULTURE. (3) An inquiry into the role of religion in the shaping of American culture.

REL 332. CONTEMPORARY BLACK RELIGION IN AMERICA. (3) An examination of the tenets of Black religion since World War II, with particular emphasis on the influence of religion and religious leaders in the struggle for a Black humanity. This course will analyze the religious experience of Black Americans in the mid-20th century. Special attention will be given to 1) the origins of Black Religion and the Black Church, 2) Black Islam, 3) Black Christianity and 4) the development of a Black religious perspective.

REL 333. SCIENCE, TECHNOLOGY AND HUMAN VISION. (3) Study of the impact of science and technology on the way we see ourselves and the world. Attention given to such topics as the relationship of science and religion, the place of the individual in a technological society and the visions of the scientific future.

REL 334. RELIGION AND LITERARY IMAGINATION. (3) Prerequisite: junior standing. An investigation of some enduring problems of religious thought and action as they have been expressed, directly and indirectly, in selected works of contemporary literature.

REL 335. THE BOUNDARIES OF LANGUAGE. (3) An examination of the adequacy of language to function as the symbolic framework for reflecting on the ultimate questions of human existence. Language studied in its boundary situations—first, at the boundaries where non-verbal, pre-reflective meaning which is rooted in the body crosses over to the verbal, reflective level of language; second, at the boundaries where language is forced beyond its ordinary uses in attempts to speak of meaning beyond language.

REL 336. VISUAL SYMBOLS OF THE HUMAN SPIRIT. (3) An examination of the role of the visual arts in the development of the human spirit. A brief study of art in traditional religions followed by an emphasis on the erosion of the traditional symbols and the attending movement of art away from traditional religious subject matter. Course concludes with an investigation of modern art in an attempt to reflect on the meaning of the visual symbols which are informing our contemporary imagination.

REL 337. RELIGIOUS ODYSSEY IN MODERN FILM. (3) Major foreign and American films made after World War II seen and discussed in terms of what they reflect about the ultimate concerns of contemporary western culture and what this implies for today's thinking in religion.

REL 338. DREAMS AND RELIGIOUS IDENTITY. (3) Begins by learning how to understand our private dreams. Analogies with the process of dreaming explored at the public or cultural level of "dreaming" as in artworks and especially at the level of religious experience and expression as in symbols and myths.

REL 339. PRIMITIVE RELIGIONS. (3) A discussion of the evidence for the religious conceptions of pre-historic man, painting, sculpture, artifacts, burial practices, etc. A study of two or three selected examples of tribal religion in the modern period, taken from paleolithic and neolithic levels of culture.

REL 342. THE RELIGIOUS PERSONALITY. (3) Based on the personal documents (diaries, journals and autobiographies) or religious individuals. Documents studied in terms of their psychological, literary and historical implications.

REL 431. PHILOSOPHY OF RELIGION. (3) Prerequisites: PHI 201 and junior standing (same as PHI 401).

REL 432. RELIGION AND MODERN THOUGHT. (3) Prerequisite: consent of the instructor. An intensive analysis of selected issues which stem from the interaction of modern thought and modern religious sensibilities.

REL 433. AMERICAN INDIAN RELIGIONS. (3) Prerequisite: consent of the instructor. A study of the myths and rituals of the American Indians with special attention to an understanding of the function of myth in defining world views and rituals as visual enactment of and involvement in those views.

REL 439. SEMINAR: RELIGION AND CULTURE. (3) Prerequisite: consent of the instructor. An intensive investigation of a special topic in the area of religion and culture.

Special Studies

REL 350. TOPICS IN RELIGION. (3) Prerequisite: consent of the instructor. May be repeated for credit. Treatment of a special topic in religious studies.

REL 450. TOPICS IN RELIGION. (3) May be repeated for credit. Prerequisite: consent of the department. Topics are to be chosen from the areas of religion specifically relating to contemporary issues in theology and religion and religious thought of non-Judeo-Christian religion.

REL 490. INDEPENDENT STUDIES. (1 to 3) Prerequisite: consent of department. May be repeated for credit. Individual investigation and appropriate exposition of the results.

REL 491. SEMINAR. (2) Prerequisite: consent of the department. Individual investigation and appropriate exposition of the results.

REL 492. SEMINAR. (2) Prerequisite: consent of the department. A continuation of REL 491.

College of Nursing

Dean: Professor Jernigan
Dean Emeritus: Brocker
Professor: Caddell
Associate Professors: Nicholson, Smith
Assistant Professors: Anderson, Brady, Campbell, Leonard, Maul, J. Mauldin, R. Mauldin, Maynard, Norris, Yaros
Instructors: Chitty, Cox, Crawford, Evans, Gentry, Harvey, Mobley, Pappas, Sanders, Stitt, Whitlock

The College of Nursing derives its purpose from those of the University of North Carolina at Charlotte and affirms its intention to teach nursing, to participate in the search for truth and to serve those who are concerned about the health care of the citizens of North Carolina, the nation and the world. The purpose of the College of Nursing is to prepare a family health nurse who is a generalist, capable of:

1. Providing nursing care for members of families in varous settings;
2. Functioning as a change agent and a leader in the promotion of health; and
3. Advancing through further education at the graduate leve.

Philosophy

The College of Nursing sees itself as a workshop in humanity—a place within the University where persons who meet admission requirements, without consideration of race, creed, sex or belief, may come to study in an atmosphere that encourages the process of learning. The faculty believe that in this workshop both faculty and students can seize opportune moments and life experiences so that they discover together how to learn continuously and creatively and how to find one's own way to contribute to the world community as an educated person with social and colleague responsibilities.

Learning is seen as the development of competencies necessary for self-analysis, value judgments, choice evaluation and behavioral changes. The faculty believe that professional nursing education belongs in a university setting. This environment provides opportunities for intellectually curious and capable students to develop their individual potentialities and integrate learnings from the arts and sciences as they acquire nursing knowledge.

The faculty believe that nursing is a profession with responsibilities and privileges, concerned with the promotion, maintenance and restoration of optimal health as well as providing supportive care when death is imminent. We hold that nursing helps to fulfill a universal need for health care services and that the uniqueness of nursing is found in the ways in which these services are performed. We further believe that

nursing is an important social force which makes an essential contribution to the total health program of society.

The curriculum of the college is designed to prepare a Family Health Nurse who is a generalist, capable of providing nursing care for members of families in various settings. The Family Health Nurse utilizes the nursing process, which is defined by this faculty as assessing, planning, implementing and evaluating. This process is deliberative, interactive, scientifically based, and devoted to helping individuals, families and groups make maximum use of their internal and environmental resources in meeting their respective health needs. In providing care the Family Health Nurse acts in dependent, independent and collaborative roles.

The Family Health Nurse utilizes concepts and principles of health, developmental theories, hierarchy of needs, and interpersonal theories in assisting the family and/or family member in maintaining or regaining optimal health. The family is seen as a natural unit in which socialization of man occurs. A change in the health status of one family member influences the total family relationships and conversely, the family influences individual health. Health is viewed as a dynamic state in which there is a constant striving by man for homeostasis while interacting with biopsychosocial influences.

Expanding knowledge in all fields of health, an increasingly better educated public, new systems for delivery of health care and changing attitudes toward health will bring about different expectations of the professional nurse in the future. Universal opinion places the importance of man's knowledge of ecological factors in sharp focus, therefore, the Family Health Nurse must be able to facilitate understanding of how man influences his environment and his environment influences his health. The faculty believe the Family Health Nurse can be a change agent by assuming a more independent role in assessing and in meeting society's health needs.

The faculty believe that upon graduation the Family Health Nurse has acquired a sound foundation for leadership, advanced study and research and will assume responsibility for continued intellectual and personal growth.

Objectives

In a setting designed to foster inquiry and discovery, the curriculum leading to a Bachelor of Science degree with a major in nursing is planned through a continuum of learning experiences to prepare a Family Health Nurse who will:

1. Utilize the nursing process with the family and its members to promote, maintain, and restore optimal health.

2. Utilize appropriate nursing roles in supporting the health of the family and its members in a variety of community settings.

3. Utilize knowledge of developmental theories to assist the family and its members in achieving an optimal level of health.

4. Utilize knowledge of interpersonal theories to promote therapeutic and colleague relationships.

5. Demonstrate movement toward self-actualization by evaluating his own behaviors and striving for personal and professional growth.

6. Function as a change agent and a leader in the promotion of health of the family, the community and society.

7. Contribute to nursing knowledge through critiquing, participating in, and utilizing scientific investigation.

8. Be capable of advancing through further education at the graduate level.

The Bachelor of Science degree with a major in Nursing is comprised of 120 semester hours credit, 50 of which are in the nursing major. This allocation of credit for nursing courses takes into consideration the student's needs for: 1) a strong general education base (50 semester hours) to complement and support the nursing major; 2) an opportunity to pursue within the University electives (20 semester hours) which add to his portfolio of learning in terms of personal and professional interests; and 3) time to participate in campus activities and creative pursuits.

Nursing and general education courses are arranged so that there is a continual interchange of theory and practice. The curriculum of the College of Nursing proceeds in a series of planned sequential learning experiences that involve the student in the teaching-learning process and permit development of the intellectual processes of inquiry, analysis synthesis, and creativity.

Requirements for Progression in the Nursing Program

In order to promote the progression of safe practitioners from one level to the next within the College of Nursing and eventually into the nursing profession, students

1. Must achieve a minimum grade of *C* in *each nursing course*

   a. Course grades reflect combined theoretical and clinical performance, neither compontent of which must be less than *C*

   b. Only four semester hours of *D* credit in a natural science is acceptable for credit by the College of Nursing

2. May not repeat a nursing course more than once. If a student repeats a nursing course and does not achieve a minimum of *C*, she will be asked to withdraw from the College of Nursing.

3. May not progress to the next level in the nursing curriculum until the pre-requisite nursing courses have been completed.

4. May not attempt junior-level nursing courses until Sociology 151, 232, Psychology 101, Biology 101, 203, 205 and Chemistry 103 and 104 and sophomore level nursing courses have been completed and a 2. quality point ratio has been earned.

5. May not attempt senior-level nursing courses until all junior-level nursing courses have been completed, including Psychology 307 and a 2. QPR has been earned.

6. Student may receive *I* in accordance with policy stated in UNCC *Catalog* when confronted with personal or family crises.

CURRICULAR REQUIREMENTS FOR THE BACHELOR OF SCIENCE DEGREE WITH A MAJOR IN NURSING

FRESHMAN YEAR

English 3	English 102 3
Math/Language 3-4	Math/Language 3-4
Biology 101 4	Nursing 102 3
Chemistry 103 4	Chemistry 104 4
—	Sociology 151 3
14-15	—
	16-17

SOPHOMORE YEAR

Nursing 201 4	Nursing 202 4
Biology 203 4	Biology 205 4
Sociology 232 3	Elective 6-8
Psychology 101 3	—
Elective 3	16-18
—	
17	

JUNIOR YEAR

Nursing 301-A 4	Nursing 301-B 4
Nursing 302 4	Nursing 303 4
Psychology 307 3	Electives 6
Elective 3	—
—	14
14	

SENIOR YEAR

Nursing 401 5	Nursing 402 5
Nursing 403 5	Nursing 404 4
Nursing 491 2	Nursing 492 2
Elective 3	Elective 3
—	—
15	14

NURSING

NUR 102. ECOLOGY OF MAN. (3) The focus of the course is directed toward understanding the relationship of selected environmental and social factors to man's health and the meaning of health and illness to the individual, his family and the community. Major health problems are explored along with a wide variety of facilities society provides for meeting health needs and solving health problems. Current trends in providing health care, including the individual's entry into the health care system, are also discussed.

NUR 201. FUNDAMENTALS OF NURSING I. (4) Prerequisites: NUR 102, CHE 103 and 104, BIO 101, SOC 151 or PSY 101, and sophomore standing. Corequisites: BIO 203 or 205 or SOC 232. The focus of this course is the nursing process, with emphasis on the assessment of the individual and his family to determine their physical and psychosocial needs. Basic principles and concepts essential for nursing care are introduced. Study of the well individual enhances the students' understanding of human development, behavior and aging.

NUR 202. FUNDAMENTALS OF NURSING II. (4) Prerequisites: NUR 201. Corequisites: BIO 203 or 205, SOC 232. This course focuses on the planning and implementation phases of the nursing process in providing family-centered care. Students increase their knowledge and use of therapeutic techniques in assisting well and ill individuals.

NUR 301-A. NURSING OF THE ADULT FAMILY MEMBER I. (4) Prerequisites: junior standing; NUR 102, 201, 202; completion of sophomore pre- and corequisites. Corequisites: NUR 302 or NUR 303, PSY 307. This course emphasizes the response of the adult and his family to illness, presenting content in a problem oriented manner. The course focuses on utilization of the nursing process in restoring the adult to an optimal level of wellness, pathophysiology and medical-surgical therapy serving as a basis for planning and implementing appropriate nursing care.

NUR 301-B. NURSING OF THE ADULT FAMILY MEMBER II. (4) A continuation of NUR 301-A.

NUR 302. NURSING OF THE CHILDBEARING FAMILY. (4) Prerequisites: junior standing; NUR 201, 202; completion of sophomore pre- and corequisites. Corequisites: NUR 301-A or 301-B, PSY 307. This course is designed to enable the family health nurse student to utilize the nursing process, with emphasis on planning and implementing, in provision of care to the childbearing family and its members. The focus is on growth and development of each family member along the wellness-illness continuum from fertilization through the puerperiumneonatal periods.

NUR 303. NURSING OF THE CHILD REARING FAMILY. (4) Prerequisites: junior standing; NUR 201, 202; completion of sophomore pre- and corequisites. Corequisites: NUR 301-A or 301-B, PSY 307. This

course enables the student to understand the basic concepts of patient care from infancy through the adolescent period with emphasis on the child rearing family. The interrelatedness of biopsychosocial principles is stressed. The student utilizes the nursing process with emphasis on planning and implementing as he provides nursing care for the child and his family along the wellness-illness continuum.

NUR 401. MENTAL HEALTH NURSING. (5) Prerequisites: completion of all required courses below the 400 level. This course is designed to assist the student in exploring and understanding the dynamics of interpersonal relationships as adaptive and maladaptive processes in individuals, families and groups. Emphasis is placed upon the development of awareness of personal behavior and its effect on the client relationship. Building on classical and current theory in psychology, sociology and physiology, content emphasis is on assisting the student in identifying, adapting, implementing and evaluating theoretical constructs which are most appropriate to 1) the learner's potential and 2) the client's need. The student works in hospital and community settings as he applies the nursing process to selected long and short term client relationships.

NUR 402. NURSING OF THE ADULT FAMILY MEMBER III. (5) Prerequisites: completion of all required courses below the 400 level. This course is designed to further the students knowledge of and skill in providing care for adult family members who have demonstrated alterations in body functions. Opportunities are provided for experiences in triage, ambulatory care, acute care, referral to community agencies and home visits. Emphasis is placed on independent decision making in applying the nursing process in the care and support of family members in such specialized areas as acute coronoary care, post-operative intensive care area and emergency room.

NUR 403. COMMUNITY HEALTH NURSING. (5) Prerequisites: completion of all required courses below the 400 level. This course is designed to assist the student in utilizing communication and interpersonal skills in family-centered and community settings; understanding the nursing process in promotion of high-level wellness and health maintenance for families and communities; understanding professional responsibility as a health team member in an interdisciplinary approach to family and community health; utilizing knowledge of community health theory in evaluating the health care for individuals, families and communities; and relating community health and community health nursing to current practice and trends to health care.

NUR 404. MANAGEMENT OF PATIENT CARE. (4) Prerequisites: completion of all required courses below the 400 level. The focus of this course is on the assessment of an existing health care unit; the assumption of responsibility for health care within the framework of the unit, and the ability of the learner to determine ways to improve care and plan for change.

NUR 490. TOPICS IN NURSING. (3) Prerequisites: consent of the college. Topics to be chosen from the specialties of nursing.

NUR 491. RESEARCH IN NURSING I. (2) Prerequisites: completion of all required courses below the 400 level. Introduction to research in nursing. Students review and critique studies from nursing and related areas.

NUR 492. RESEARCH IN NURSING II. (2) Prerequisite: NUR 491. This course provides opportunity for the student to study a nursing problem using the research method.

College of Science and Mathematics

Dean: Charles H. Stone Professor Burson

The College of Science and Mathematics includes the Departments of Biology, Chemistry, Mathematics and Physics.

DEPARTMENT OF BIOLOGY

Chairman: Professor Arvey
Professors: Hechenbleikner, Hildreth, Matthews
Associate Professors: Edwards, Hogan, Menhinick
Assistant Professors: Barden, Bashor, Butts, Haviland, Johnson, Oliver, Ostrowski, Travis
Visiting Assistant Professor: Baker
Lecturer: Brown

A major in biology leading to the B.A. degree consists of 32 semester hours of biology including Biology 211, 221, 231, 491 and one course each in three areas to be chosen from development, ecology, genetics and physiology. A minimum of five laboratory courses in biology is required. Additional requirements are 12 semester hours of chemistry with associated labs, including Chemistry 101 and 102; and six semester hours of mathematics.

Each biology major must show a proficiency through the second semester freshman level of a foreign language either by satisfactory completion of courses 101 and 102 in the language or by achieving a satisfactory score on an appropriate test. Students contemplating attending graduate school are strongly recommended to gain a proficiency in French, German or Russian.

In addition to the requirements for the B.A. degree, a student wishing to receive the B.S. degree is required to take eight additional hours in biology, for a total of 40 hours; Chemistry 231 and 232, with associated labs, in place of the chemistry elective; Physics 101 and 102, and three additional hours of mathematics (MAT 122 or CSC 100 is suggested).

SUGGESTED CURRICULUM FOR THE B.A. DEGREE IN BIOLOGY

FRESHMAN YEAR

Chemistry 101, 101L	4	Biology 211	4
English 101	3	Chemistry 102, 102L	4
Mathematics 103	3	English 102	3
Electives	6-7	Mathematics or Computer Science Elective	3
	16-17	Electives	3-4
			17-18

SOPHOMORE YEAR

Biology 221 4	Biology 231 4
Chemistry elective 4	Electives 9-12
Electives 6-9	—
—	13-16
14-17	

JUNIOR YEAR

Biology electives 8	Biology electives 8
Electives 6-9	Electives 6-9
—	—
14-17	14-17

SENIOR YEAR

Biology 491 1	Electives 15
Biology elective 4	—
Electives 9-12	15
—	
14-17	

SUGGESTED CURRICULUM FOR THE B.S. DEGREE IN BIOLOGY

FRESHMAN YEAR

Chemistry 101, 101L 4	Biology 211 4
English 101 3	Chemistry 102, 102L 4
Mathematics 103 3	English 102 3
Electives 6-7	Mathematics 120 or 141 or Computer Science 3
—	Electives 3-4
16-17	—
	17-18

SOPHOMORE YEAR

Biology 221 4	Biology 231 4
Chemistry 231, 231L 4	Chemistry 232, 232L 4
Mathematics 122 or 142 or Computer Science 3	Mathematics 122 or 142 or Computer Science 3
Electives 3-6	Electives 6-9
—	—
14-17	14-17

JUNIOR YEAR

Biology elective 4	Biology elective 8
Physics 101 4	Physics 102 4
Electives 6-9	Electives 3-6
—	—
14-17	15-18

SENIOR YEAR

Biology electives	8
Electives	6-9
	14-17

Biology 491	1
Biology electives	8
Electives	6
	15

*B.A. IN BIOLOGY WITH AN OPTION IN MEDICAL TECHNOLOGY**

A student may complete the departmental requirements for the B.A. degree in Biology in three years. Upon satisfactory completion of training in medical technology at a school of medical technology, which has been approved by the National Registry of Clinical Pathologists and UNCC, the student may receive a B.A. degree in Biology from UNCC. A maximum of 30 hours will be accepted from the school of medical technology. Eight of these hours will apply toward the requirements for the major in Biology. The student must have at least a 2.0 average, overall and in the major, at the end of the junior year. The final 30 hours counted toward the degree and the last 12 hours counted toward the major prior to entering a school of medical technology must be taken at UNCC. The student may obtain information from his departmental adviser concerning those specific schools of medical technology cooperating with UNCC in this program.

FRESHMAN YEAR

Chemistry 101	4
Mathematics 103	3
English 101	3
Electives	6-7
	16-17

Biology 211	4
Chemistry 102	4
Mathematics 122	3
English 102	3
Elective	3-4
	17-18

SOPHOMORE YEAR

Biology 221	4
Biology 331	3-4
Chemistry 231	4
Elective	3
	14-15

Biology 231	4
Chemistry elective	4
Electives	6-7
	14-15

JUNIOR YEAR

Biology 311	3-4
Electives	11-12
	14-16

Biology 491	1
Electives	14-16
	15-16

TOTAL 90-97

* It is possible to obtain a B.S. degree in biology by careful planning with the adviser.

SENIOR YEAR

At an approved School of Medical Technology

COURSE DESCRIPTIONS

BIOLOGY

BIO 101. PRINCIPLES OF BIOLOGY. (4) Recommended as a general university elective, without credit toward the major. Fundamental principles of life. Three lecture hours and one laboratory period of two hours a week.

BIO 203. BACTERIOLOGY. (3) Prerequisites: one semester of biology and one semester of chemistry. No credit toward a biology major. Basic physiology of bacteria and viruses, with emphasis on the pathogens and the epidemiology of microbial diseases. Three lecture hours a week.

BIO 203L. BACTERIOLOGY LABORATORY. (1) Prerequisite or corequisite: BIO 203. One laboratory period of three hours a week.

BIO 205. HUMAN ANATOMY AND PHYSIOLOGY. (3) Prerequisite: one semester of biology. No credit toward a biology major. Basic fundamentals of the anatomy and physiology of the human body as an integrated unit. Three lecture hours a week.

BIO 205L. HUMAN ANATOMY AND PHYSIOLOGY LABORATORY. (1) Prerequisite or corequisite: BIO 205. One laboratory period of three hours a week.

BIO 211. PLANT BIOLOGY. (4) Prerequisite: open to majors and non-majors; one course in biology prerequisite for non-majors. The morphology, function, reproduction, phylogeny and ecology of plants. Three lecture hours and one laboratory period of three hours a week.

BIO 221. ANIMAL BIOLOGY. (4) Prerequisite: open to majors and non-majors; one course in biology prerequisite for non-majors. The morphology, function, development, phylogeny and ecology of the principle invertebrate and vertebrate types. Three lecture hours and one laboratory period of three hours a week.

BIO 231. CELL BIOLOGY. (4) Prerequisite: two semesters of chemistry. Structural, functional and genetic aspects of cells; principles underlying living systems. Three lecture hours and one laboratory period of three hours a week.

BIO 301. NATURAL HISTORY. (4) Prerequisite: open to students in elementary education and to others with consent of department. No credit toward a biology major. Ecological aspects of plant and animal distribution, the importance of conservation of natural resources, and plant and animal identification. Three lecture hours and one laboratory period of three hours a week.

BIO 311. MICROBIOLOGY. (3) Prerequisite: BIO 231. Morphology, physiology and methods of culture and control of bacteria, viruses and related micro-organisms. Three lecture hours a week.

BIO 311L. MICROBIOLOGY LABORATORY. (1) Prerequisite or corequisite: BIO 311. One laboratory period of three hours a week.

BIO 319. PLANT SYSTEMATICS. (4) Prerequisite: BIO 211. Identification, classification and phylogenetic relationships of seed plants, including preparation and preservation of specimens. Two lecture hours and two laboratory periods of two hours each week.

BIO 321. VERTEBRATE ZOOLOGY. (4) Prerequisite: BIO 221 or consent of department. Taxonomy, anatomy, physiology and life histories of vertebrates, with emphasis on local forms. 321A - Ichthyology, 321B - Herpetology, 321C - Ornithology, 321D - Mammalogy. Three lecture hours and one laboratory period of three hours a week.

BIO 323. PARASITOLOGY. (4) Prerequisite: BIO 221. Morphology, life cycles, ecology, taxonomy and economic importance of parasites. Three lecture hours a week and one laboratory period of three hours a week.

BIO 325. INVERTEBRATE ZOOLOGY. (4) Prerequisite: BIO 221. Taxonomy, anatomy, physiology and life histories of invertebrates, with main emphasis on species important to man. Three lecture hours and one laboratory period of three hours a week.

BIO 331. GENETICS. (3) Prerequisite: BIO 231 or one course in biology and consent of department. Basic concepts of heredity; principles of classical and molecular genetics. Three lecture hours a week.

BIO 331L. GENETICS LABORATORY. (1) Prerequisite or corequisite: BIO 331. One laboratory period of three hours a week.

BIO 333. PLANT GROWTH AND DEVELOPMENT. (4) Prerequisite: BIO 211 and 231. Growth and development of plants with emphasis on physical and chemical differentiation. Three lecture hours and one laboratory period of three hours a week.

BIO 335. HUMAN GENETICS. (3) Prerequisite: one semester of biology. The inheritance of physical and mental characteristics in man. Effects on mutation, selection, migration and environment are considered. Three lecture hours a week.

BIO 338. EMBRYOLOGY. (3) Prerequisite: BIO 221 or 101 with consent of department. Developmental processes occuring chiefly during gametogenesis, fertilization, early embryogenesis and organogenesis. Three lecture hours a week.

BIO 338L. EMBRYOLOGY LABORATORY. (1) Prerequisite or corequisite: BIO 338. One laboratory period of three hours a week.

BIO 345. COMPARATIVE VERTEBRATE ZOOLOGY. (4) Prerequisite: BIO 221. Comparative studies of the anatomy, physiology and functional adaptations of selected vertebrates with emphasis on evolutionary developments, especially in mammals. Three lecture hours and one laboratory period of three hours a week.

BIO 347. HISTOLOGY. (4) Prerequisite: BIO 221 or 231 or 101 with consent of department. Animal tissues and organs; techniques of preparing tissues for analysis. Two lecture hours and two laboratory periods of two hours a week.

BIO 352. VERTEBRATE PALEONTOLOGY. (3) Prerequisite: BIO 221 or consent of department. Evolution of vertebrate animals from the first fishes to man. Three lecture hours a week.

BIO 355. ANIMAL BEHAVIOR. (3) Prerequisite: one course in biology or consent of department. Causation, development, function and evolution of behavior. Topics include communication systems, social systems and behavior of man. Three lecture hours a week.

BIO 355L. ANIMAL BEHAVIOR LABORATORY. (1) Prerequisite or corequisite: BIO 355. One laboratory period of three hours a week.

BIO 361. ECOLOGY. (4) Prerequisites: BIO 211, 221 and one course in chemistry. Interrelationships of organisms and their environment. Three lecture hours and one laboratory period of three hours a week.

BIO 363. FIELD BIOLOGY. (4) Prerequisite: BIO 211 and 221. Roles of soils, water and climate on plant growth and distribution; plant succession and its effect on animal distribution; identification and life histories of selected plants and animals. Three lecture hours and one laboratory period of three hours a week.

BIO 369. ENVIRONMENTAL PROBLEMS. (3) Prerequisite: one course in biology and one course in chemistry. Biological aspects of air, water and land pollution; resource depletion; and over-population. Three lecture hours a week.

BIO 373. PLANT PHYSIOLOGY. (4) Prerequisites: BIO 211 and 231. Metabolic and physiological processes of plants and conditions which affect or regulate these processes. Three lecture hours and one laboratory period of three hours a week.

BIO 375. ANIMAL PHYSIOLOGY. (4) Prerequisite: BIO 221 and two courses in chemistry. Fundamental control mechanisms which operate to maintain the homeostatic state. Three lecture hours and one laboratory period of three hours a week.

BIO 391. RADIATION BIOLOGY. (3) Prerequisite: BIO 231 and one course in organic chemistry. Biological effects of ionizing radiation on living matter. Three lecture hours a week.

BIO 395. SPECIAL TOPICS IN BIOLOGY. (1-4) May be repeated for credit. Prerequisite: consent of department. Used to comply with requests for special topics and advanced studies in biology. Lecture hours and laboratory hours will vary with the courses taught.

BIO 397. INTERNSHIP IN COMMUNITY EDUCATION AND SERVICE. (3) Prerequisites: junior standing, acceptance into the program and approval of the department. Corequisite: SBS 398. A project oriented, service-learning internship with cooperating community organizations. The Department of Biology has the option of recognizing this credit as fulfilling departmental requirements and granting permission to repeat for credit.

BIO 401. INTEGRATIVE STUDIES IN BIOLOGY. (3) No credit toward a biology major, except one hour which may be substituted for Biology 491. A course for, but not limited to, persons preparing to teach grades 7-12. An integration of the various disciplines of biology stressing the attitudes and techniques necessary to teach laboratory-oriented courses. Three lecture hours a week.

BIO 425. NEUROBIOLOGY. (3) Prerequisite: BIO 231 or consent of department. Physiology and anatomy of nervous systems. Three lecture hours a week.

BIO 425L. NEUROBIOLOGY LABORATORY. (1) Prerequisite or corequisite: BIO 425. One laboratory period of three hours a week.

BIO 437. CYTOGENETICS. (4) Prerequisite: BIO 331. Plant and animal cells, with emphasis on problems of chromosomal organization, function and behavior including the role of chromosome number and aberrations in speciation and evolution. Three lecture hours and one laboratory period of three hours a week.

BIO 438. MECHANISMS IN DEVELOPMENT. (3) Prerequisites: BIO 231 and 338, or consent of department. Cellular and molecular bases of differentiation; an exploration of the experimental analysis of causal and controlling factors in development. Three lecture and discussion hours a week.

BIO 451. EVOLUTION AND POPULATION GENETICS. (3) Prerequisite: BIO 331 or 335. Theories of evolution and forces which affect population genetics. Three lecture hours a week.

BIO 461. LIMNOLOGY AND OCEANOGRAPHY. (3) Prerequisite: two courses in chemistry. Geological, physical, chemical and biological aspects of lakes, streams, estuaries and oceans. Three lecture hours a week.

BIO 461L. LIMNOLOGY AND OCEANOGRAPHY LABORATORY. (1) Prerequisite or corequisite: BIO 461. One laboratory period of 3 hours a week.

BIO 473. IMMUNOLOGY. (3) Prerequisites: BIO 311 and one semester of organic chemistry. Basic concepts of disease resistance in mammals: non-specific defense mechanisms, physiochemical properties and interactions of antigens and antibodies, and cell-associated defense phenomena. Three lecture hours a week.

BIO 473L. IMMUNOLOGY LABORATORY. (1) Prerequisite or corequisite: BIO 311. One laboratory period of three hours a week.

BIO 474. VIROLOGY. (4) Prerequisite: BIO 311, 311L and two courses in organic chemistry. Morphology, classification, genetics and pathogenicity of bacterial, plant and animal viruses. Three lecture hours and one laboratory period of three hours a week.

BIO 475. ENDOCRINOLOGY. (3) Prerequisite: BIO 375 and one course in organic chemistry. Endocrine glands and their physiological roles in metabolism, growth and reproduction. Three lecture hours a week.

BIO 475L. ENDOCRINOLOGY LABORATORY. (1) Prerequisite or corequisite: BIO 475. One laboratory period of three hours a week.

BIO 476. COMPARATIVE INVERTEBRATE PHYSIOLOGY. (3) Prerequisite: BIO 221, 231 and one course in organic chemistry or consent of department. Maintenance of body fluids; acquisition, processing and distribution of nutrient materials; gas exchange; movement and coordinator. Three lecture hours a week.

BIO 476L. COMPARATIVE INVERTEBRATE PHYSIOLOGY LABORATORY. (1) Prerequisite or corequisite: BIO 476. One laboratory period of three hours a week.

BIO 477. CELL PHYSIOLOGY. Prerequisites: BIO 231 and CHE 231. The fundamental physiochemical properties of cells. Three lecture hours a week.

BIO 484. RADIOISOTOPE TECHNIQUES. (4) Prerequisite: two semesters of chemistry. Use of radioisotopes in science: properties of sub-atomic particles, instrumentation, safety procedures and radioisotope labeling. Three lecture hours and one laboratory period of three hours a week.

BIO 491. SEMINAR. (1) Required of all majors, to be taken during the senior year. Pertinent topics in the field of biology, and reports on original research are discussed. Students are required to act as the discussion leaders. One lecture hour a week.

BIO 497. INVESTIGATIONS IN BIOLOGY. (1-4) May be repeated for credit. Prerequisite: consent of the department. A course designed to allow junior and senior biology majors to initiate research projects in their respective fields of interest.

DEPARTMENT OF CHEMISTRY

Chairman: Professor Gibson
Charles H. Stone Professor of Chemistry: Burson
Professors: Crosthwaite, Kuppers
Associate Professors: Bush, DuBois, Walsh
Assistant Professors: Cooke, Howard, Jones, Mattingly, Rillema

Students planning to start careers as chemists with the baccalaureate degree and those who intend to prepare for graduate study in chemistry should pursue the B.S. degree.

A major in chemistry leading to the B.S.* degree consists of a minimum of 44 semester hours of chemistry among which must be included Chemistry 101, 102, 101L, 102L, 231, 232, 231L, 232L, 311, 341, 342, 411, 421, 431 and two semesters of Chemistry 495. Related work in mathematics and physics must include Mathematics 141, 142, and 241 or 271 and Physics 221, 231, 251 and 252. Two years of German or Russian are required for the B.S. degree.

The B.A. curriculum can be tailored to fit individual needs of those preparing for medical and dental schools, those considering graduate work in sciences closely related to chemistry and those desiring a liberal education with concentration in chemistry and related natural sciences.

A major in chemistry leading to the B.A. degree consists of a minimum of 28 semester hours of chemistry among which must be included Chemistry 101, 102, 101L, 102L, 231, 232, 231L, 232L and 311. Related work must include Mathematics 141, 142 and eight hours of physics.

Students who complete a major in chemistry automatically meet the chemistry subject matter requirements, on the secondary level, for teacher certification in North Carolina. Students seeking teacher certification should consult a coadviser in the College of Human Development and Learning for detailed planning of their professional education.

B.A. IN CHEMISTRY WITH AN OPTION IN MEDICAL TECHNOLOGY

A student may complete the departmental requirements for the B.A. degree in Chemistry in three years. Upon satisfactory completion of training in medical technology at a school of medical technology, which has been approved by the National Registry of Clinical Pathologists and UNCC, the student may receive a B.A. degree in Chemistry from UNCC. A maximum of 30 hours will be accepted from the school of medical technology. Four of these hours will apply toward the requirements for the major in chemistry. The student must have at least a 2.0 average, overall and in the major, at the end of the junior year. The final 30 hours counted toward the degree and the last 12 hours counted

* The B.S. degree program is approved by the Committee on Professional Training of the American Chemical Society.

toward the major prior to entering a school of medical technology must be taken at UNCC. The student may obtain information from his departmental adviser concerning those specific schools of medical technology cooperating with UNCC in this program.

Honors Program in Chemistry

The recommended curriculum for the B.S. degree in Chemistry includes independent study and seminar presentation during the final year of study. To obtain a degree with Honors in Chemistry, the student must complete two semesters of independent research with a grade of Pass Honors, two semesters of the senior seminar with a grade of Pass Honors and at least one junior level laboratory course with a grade of Pass Honors. The student will formally enter the honors program at the beginning of his junior year or halfway through his junior year. Consideration for admission to the program may be initiated by the student or by any faculty member. The Honors Committee of the Chemistry Department will formally approve admission.

The department, in addition to the foregoing undergraduate programs, offers the *Master of Science degree in Chemistry.* This is a research-based program in which major emphasis is placed upon the research project and required thesis. Further details may be found in the *Graduate Catalog.*

RECOMMENDED CURRICULUM FOR THE B.A. DEGREE IN CHEMISTRY

FRESHMAN YEAR

Chemistry 101*	3	Chemistry 102*	3
Chemistry 101L*	1	Chemistry 102L*	1
English 101	3	English 102	3
Mathematics 103**	3	Mathematics 141**	4
Social Science	3	Social Science	3
Elective	3	Elective	3
	16		17

SOPHOMORE YEAR

Chemistry 231	3	Chemistry 232	3
Chemistry 231L	1	Chemistry 232L	1
Mathematics 142	4	German 102	4
German 101	4	Humanities	3
Humanities	3	Electives	6
	15		17

*Students who can demonstrate to the Chemistry Department proficiency in Chemistry 101, 102, 101L, and 102L (Principles of Chemistry) may start with Chemistry 231 and 231L (see Credit by Examination, pages 53-54).

**For proper placement in the mathematics sequence, the student must take placement examinations offered by the Mathematics Department.

JUNIOR YEAR

Chemistry 311	4	Chemistry	3
Mathematics	3	Mathematics	3
Physics	4	Physics	4
German 201	4	German 202	4
	—	Elective	3
	15		—
			17

SENIOR YEAR

Chemistry	4	Chemistry	4
Electives	12	Electives	12
	—		—
	16		16

RECOMMENDED CURRICULUM FOR THE B.S. DEGREE IN CHEMISTRY

FRESHMAN YEAR

Chemistry 101*	3	Chemistry 102*	3
Chemistry 101L*	1	Chemistry 102L*	1
English 101	3	English 102	3
Mathematics 141**	4	Mathematics 142**	4
German 101	4	German 102	4
	—		—
	15		15

SOPHOMORE YEAR

Chemistry 231	3	Chemistry 232	3
Chemistry 231L	1	Chemistry 232L	1
Mathematics 241 or 271	3	Physics 231	3
Physics 221	3	Physics 252	2
Physics 251	1	German 202	4
German 201	4	Elective	3
	—		—
	15		16

JUNIOR YEAR

Chemistry 341	4	Chemistry 342	4
Chemistry 311	4	Chemistry 411	4
Humanities	3	Humanities	3
Social Science	3	Social Science	3
	—		—
	14		14

*Students who can demonstrate to the Chemistry Department proficiency in Chemistry 101, 102, 101L, and 102L (Principles of Chemistry) may start with Chemistry 231 and 231L (See Credit by Examination, pages 53-54.)

**For proper placement in the mathematics sequence, the student must take placement examinations offered by the Mathematics Department.

SENIOR YEAR

Chemistry 421	4	Chemistry 431	4
Chemistry 490	2	Chemistry 490	2
Chemistry 495	1	Chemistry 495	1
Electives	9	Electives	9
	16		16

RECOMMENDED CURRICULUM FOR THE B.A. IN CHEMISTRY WITH AN OPTION IN MEDICAL TECHNOLOGY

FRESHMAN YEAR

Chemistry 101*	4	Chemistry 102*	3
Chemistry 101L*	1	Chemistry 102L*	1
Mathematics 103**	3	Mathematics 141**	4
English 101	3	English 102	3
Physics 101	4	Physics 102	4
	14		15

SOPHOMORE YEAR

Chemistry 231	3	Chemistry 232	3
Chemistry 231L	1	Chemistry 232L	1
Mathematics 142	4	Biology 231	4
Biology 221	4	Social Science	3
Social Science	3	Humanities	6
	15		17

JUNIOR YEAR

Chemistry 311	4	Chemistry Elective	4
Biology 375	4	Electives	9-11
Biology 311	3		13-15
Biology 311A	1		
Elective	3		
	15		

TOTAL 90-92

SENIOR YEAR
At an approved school of medical technology.

Separate lecture and laboratory sections - Although the laboratory and lecture sections of CHE 101, 102, 103, 104, 231 and 232 are taught as separate courses, it is strongly recommended that students take the

*Students who can demonstrate to the Chemistry Department proficiency in Chemistry 101, 102, 101L, and 102L (Principles of Chemistry) may start with Chemistry 231 and 231L (see Credit by Examination, pages 53-54).

**For proper placement in the mathematics sequence, the student must take placement examinations offered by the Mathematics Department.

appropriate laboratory concurrently with the lecture. Students with severe scheduling problems or students with course programs which do not require the laboratory may take the lecture without the laboratory.

Prior to the last day to drop a course without grade evaluation, students withdrawing from lecture must also withdraw from any laboratory course for which the lecture is a corequisite. After the last day to drop a course without grade evaluation, the lecture may be dropped and the laboratory continued only with the consent of the student's laboratory instructor.

Students using CHE 101 and 102 or CHE 103 and 104 to satisfy the *University Requirements* for the B.A. and B.S. Degrees (pages 37, 39) must also take CHE 101L and 102L or CHE 103L and 104L, respectively.

COURSE DESCRIPTIONS

CHEMISTRY

CHE 101. PRINCIPLES OF CHEMISTRY. (3) Prerequisite or corequisite: MAT 101 or 103. A principles-oriented course for science majors. Fundamental postulates and laws of chemistry; the relationship of atomic structure to physical and chemical properties of the elements. Two lecture hours and one recitation hour per week.

CHE 101L. PRINCIPLES OF CHEMISTRY LABORATORY. (1) Prerequisite or corequisite: CHE 101. Experimental investigations involving the fundamental postulates and laws of chemistry. One laboratory period of three hours per week.

CHE 102. PRINCIPLES OF CHEMISTRY. (3) Prerequisite: CHE 101. Continuation of CHE 101. Two lecture hours and one recitation hour per week.

CHE 102L. PRINCIPLES OF CHEMISTRY LABORATORY. (1) Prerequisites: CHE 101 and 101L. Prerequisite or corequisite: CHE 102. Continuation of CHE 101L. One laboratory period of three hours per week.

CHE 103. GENERAL CHEMISTRY. (3) Designed primarily for non-science majors. Fundamentals of chemistry and selected topics from inorganic, organic, colloid, nuclear and biochemistry. Three lecture hours per week (Credit for both 101 and 103 will not be given.)

CHE 103L. GENERAL CHEMISTRY LABORATORY. (1) Prerequisite or corequisite: CHE 103. Laboratory investigations into the nature of inorganic and organic compounds. One laboratory period of three hours per week. (Credit for both 101L and 103L will not be given.)

CHE 104. GENERAL CHEMISTRY. (3) Designed primarily for non-science majors. Prerequisite: CHE 103. Continuation of CHE 103 including qualitative analysis. Three lecture hours per week. (Credit for both 102 and 104 will not be given.)

CHE 104L. GENERAL CHEMISTRY LABORATORY. (1) Prerequisites: CHE 103 and 103L. Prerequisite or corequisite: CHE 104. Continuation of CHE 103L including qualitative analysis. One laboratory period of three hours per week. (Credit for both 102L and 104L will not be given.)

CHE 225. INORGANIC CHEMISTRY. (3) Prerequisite: CHE 102. Descriptive inorganic chemistry including acid-base and non-aqueous solvent concepts. Three lecture hours a week.

CHE 231. ORGANIC CHEMISTRY. (3) Prerequisite: CHE 102. Descriptive principles and techniques of organic chemistry and their applications to reactions of aliphatic and aromatic compounds and natural products. Three lecture hours per week.

CHE 231L. ORGANIC CHEMISTRY LABORATORY. (1) Prerequisites: CHE 102 and CHE 102L. Prerequisite or corequisite: CHE 231. Laboratory investigations into the physical and chemical properties of organic compounds. One laboratory period of three hours per week.

CHE 232. ORGANIC CHEMISTRY. () Prerequisite: CHE 231. Continuation of CHE 231. Three lecture hours per week.

CHE 232L. ORGANIC CHEMISTRY LABORATORY. (1) Prerequisites: CHE 231 and 231L. Prerequisite or corequisite CHE 232. Continuation of CHE 231L. One laboratory period of three hours per week.

CHE 241. SURVEY OF PHYSICAL CHEMISTRY. (3) Prerequisites: CHE 102, 106, MAT 120 or one semester of calculus (high school or higher), PHY 101 or one semester of physics (high school or higher). A course designed for students in the life sciences or others desiring a one-semester survey of the physical aspects of chemistry. Application of thermodynamics to chemical reactions, energy transfer processes, and chemical and physical equilibria; the study of reaction rates and mechanisms; structure of gases liquids and solids; molecular structure and spectroscopy. Three lecture hours per week.

CHE 311. QUANTITATIVE ANALYSIS. (4) Prerequisite: CHE 102, 102L. Introductory course in quantitative and analytical chemistry. Principles of equilibrium, classical and simple instrumental approaches are considered. Two lecture hours and two laboratory periods of three hours each week.

CHE 312. BIORGANALYTICAL CHEMISTRY. (4) Prerequisites: Chemistry 231, 231L and 311. Introductory course in modern analytical methods, with laboratory applications emphasizing experiments in organic chemistry, biochemistry and chemical aspects of the life sciences. Two lecture hours and two laboratory periods of three hours each week.

CHE 341. PHYSICAL CHEMISTRY. (4) Prerequisites: CHE 102, 102L, PHY 231 and 252. Prerequiste or corequisite: MAT 241 or 271. The application of classical thermodynamics and the phase rule to chemical equilibrium; electrochemistry; the kinetic theory of gases and

elements of statistical mechanics applied to chemical processes; atomic and molecular structure interpreted in quantum mechanical terms. Three lecture hours and one laboratory period of three hours per week. (Credit for both 341 and 345 will not be given.)

CHE 342. PHYSICAL CHEMISTRY. (4) Prerequisite: CHE 341. Continuation of CHE 341. Three lecture hours and one laboratory period of three hours a week. (Credit for both 342 and 346 will not be given.)

CHE 345. PHYSICAL CHEMISTRY. (3) Prerequisite: consent of the instructor. Same course as CHE 341 but taught without the laboratory. Three lecture hours a week. (Credit for both 341 and 345 will not be given.)

CHE 346. PHYSICAL CHEMISTRY. (3) Prerequisite: CHE 341 or 345. Same course as CHE 342 but taught without the laboratory. Three lecture hours a week. (Credit for both 342 and 346 will not be given.)

CHE 375. INTRODUCTORY BIOCHEMISTRY. (3) Prerequisite: CHE 232. The chemical constitution of living matter; biochemical processes. Three lecture hours per week.

CHE 390. SPECIAL TOPICS IN CHEMISTRY. (1-4) Prerequisite: consent of department. May be repeated for credit. Lecture and/or laboratory hours will vary with the nature of the course taught. Topics chosen from analytical, biochemistry, inorganic, organic and physical chemistry.

CHE 397. INTERNSHIP IN COMMUNITY EDUCATION AND SERVICE. (3) Prerequisites: junior standing, acceptance into the program and approval of the department. A project oriented, service learning internship with cooperating community organizations. Credit toward the B.A. and B.S. degrees in chemistry will not be given for this course. May be repeated for credit with permission of the Chemistry Department. This course is offered on a pass/no-credit basis only.

CHE 411. INSTRUMENTAL ANALYSIS. (4) Prerequisites: CHE 311 and 341. A discussion of modern electrochemical and chromatographic techniques and of ultraviolet, infrared, NMR, ESR, Raman and mass spectroscopy. The discussion includes theory and practice, with considerable attention given to the instrument and elementary electronics involved in the techniques. Two lecture hours and two three-hour laboratory periods a week.

CHE 412. APPLIED MINICOMPUTER INTERFACING IN CHEMISTRY. (4) Prerequisite: Departmental approval. Three lecture hours and one laboratory period of three hours each week. The background needed to apply minicomputer interfacing in chemical research, including machine language programming unique to DEC PDP-8 family minicomputers and elementary digital electronics will be presented, and application of computer automation in chemical research will be discussed. The laboratory will involve individual projects; the design, development and implementation of the software and hardware needed

to solve an interfacing project selected by the student. The course is designed to provide a foundation for the use of computer automation in research. No background in programming or electronics is required.

CHE 421. ADVANCED INORGANIC CHEMISTRY. (4) Prerequisite: CHE 342. Theoretical inorganic chemistry including the application of physico-chemical principles to the study of inorganic systems. Laboratory work involves inorganic preparations and characterization techniques. Three lecture hours and one laboratory period of three hours a week.

CHE 431. ADVANCED ORGANIC CHEMISTRY. (4) Prerequisites: CHE 232, 232L and 311. Recent developments in organic chemistry. Laboratory techniques of organic chemistry with emphasis on qualitative organic analysis including instrumental methods. Two lecture hours and two laboratory periods of three hours each week.

CHE 445. ADVANCED PHYSICAL CHEMISTRY. (3) Prerequisite: CHE 342. Topics selected from quantum chemistry and/or statistical thermodynamics. Three lecture hours per week.

CHE 475. PHYSICAL BIOCHEMISTRY. (3) Prerequisites: CHE 232, 232L and 341 or 345. Colloid systems, equilibria in biological fluids, mass and energy transport in fluids and in association with membranes, energy storage and dissipation with relation to specific chemical bonding, enzyme kinetics. Three lecture hours per week.

CHE 490. INDEPENDENT STUDY AND RESEARCH. (1 to 4) Prerequisite: consent of the instructor overseeing the research. Independent study and research. A senior project in any of these fields of chemistry: organic, physical, analytical, inorganic chemistry or biochemistry; introduction to research. Hours in consultation, library and laboratory to be determined. May be repeated for credit.

CHE 495. CHEMISTRY SEMINAR. (1) Prerequisite: senior standing. Discussion of recent developments and special topics in chemistry. Written and oral reports are required.

CHE 590. SPECIAL TOPICS IN CHEMISTRY. (1-4) Prerequisite: consent of department. May be repeated for credit. Lecture and/or laboratory hours will vary with the nature of the course taught. Selected topics in chemistry.

Chairman: Professor Schell
Professors: Embry, Goodrum, Nixon
Associate Professors: Archer, Lambert, Lucas, Schurle
Assistant Professors: Allen, Hameed, Hedstrom, Houston, Johnson, Ju*, Leiva, Malmgren, Niccolai, Pellerin, Quinn*, Reiter, Roth, Stavrakas, Stewart, Wichnoski, Wright
Lecturers: Benson, Keith
Part-Time Instructors: Davis, Helmintoller, Jones, McNairy, C. Pellerin, Priebe, B. Reiter, Taylor, Thomas, Whitton

Two baccalaureate degrees are offered by the Department of Mathematics, a Bachelor of Arts degree and a Bachelor of Science degree. Within each degree one may select one of two options, either the option in Mathematics or the new option in Computer Science. The description of the Mathematics option follows immediately. The description of the Computer Science option begins on page 242.

Option in Mathematics

A major in mathematics for the B.A. degree consists of a minimum of 27 semester hours of mathematics courses numbered 140 and above and approved by the department. Related work must be approved by the department.

A major in mathematics for the B.S. degree consists of a minimum of 39 semester hours of mathematics courses numbered 140 and above and approved by the department. Related work must be approved by the department. A student planning to study mathematics in graduate school should take French, German or Russian.

An entering freshman who plans to take Mathematics 141, in particular a mathematics major, will first enroll in Mathematics 103, unless exempted by the department. It is recommended that a prospective freshman major enroll in this course during the summer session immediately preceding his freshman year.

Specific requirements for the B.A. and B.S. degree will vary with the specific objectives of the student. Some objectives which are possible are: graduate work, applied mathematics, statistics, computer science, certification for elementary or secondary teaching.

* On leave of absence.

CURRICULUM OUTLINE FOR THE B.A. OPTION IN MATHEMATICS

FRESHMAN YEAR

Mathematics 141 4	Mathematics 142 4
English 101 3	English 102 3
Social Science 3	Social Science 3
Language (Or Elective) ..... 4(3)	Language (Or Elective) ..... 4(3)
14(13)	14(13)

SOPHOMORE YEAR

Mathematics 241	3	Mathematics 271	3
Mathematics 263 (or 264)	3	Mathematics 264 (or 263)	3
Humanities	3	Humanities	3
Science	4	Science	4
Related Work	3	Related Work	3
	16		16

JUNIOR YEAR

Mathematics 3xx or 4xx	3	Mathematics 3xx or 4xx	3
Related Work	3	Related Work	3
Electives	9	Electives	9
	15		15

SENIOR YEAR

Mathematics 3xx or 4xx	3	Mathematics 3xx or 4xx	3
Related Work	3	Related Work	3
Electives	10	Electives	8-10
	16		14-16

CURRICULUM OUTLINE FOR THE B.S. OPTION IN MATHEMATICS

FRESHMAN YEAR

Mathematics 141	4	Mathematics 142	4
English 101	3	English 102	3
Social Science	3	Social Science	3
Language (Or Elective)	4(3)	Language (Or Elective)	4(3)
	14(13)		14(13)

SOPHOMORE YEAR

Mathematics 241	3	Mathematics 271	3
Mathematics 263 (or 264)	3	Mathematics 264 (or 263)	3
Humanities	3	Humanities	3
Science	4	Science	4
Related Work	3	Related Work	3
	16		16

JUNIOR YEAR

Mathematics 341 3	Mathematics 3xx or 4xx 3
Science 3-4	Related Work 3
Related Work 3	Electives 9
Electives 3	—
—	15
15-16	

SENIOR YEAR

Mathematics 3xx or 4xx 6	Mathematics 3xx or 4xx 6
Related Work 3	Related Work 3
Electives 6	Electives 6-8
—	—
15	15-17

COURSE DESCRIPTIONS

MATHEMATICS

The first digit of each course number indicates the year in which the course is normally taken: 1 denoting the freshman year and 2, 3, 4 denoting the sophomore, junior and senior years respectively; a first digit of 5 denotes graduate courses which are also open for undergraduate credit; first digits of 6 and 7 denote courses open only for graduate credit.

The middle digit of each course number generally indicates the subarea of mathematics to which the course belongs according to the following scheme—

0: General concepts; foundations and history of mathematics

1: Decision mathematics

2: Probability and statistics

3: Mathematics Education

4: Analysis

5: General topics

6: Algebra

7: Applied mathematics

8: Geometry-topology

9: Seminars and independent study

(MAT 120 is the only exception to this scheme.)

MAT 101. BASIC CONCEPTS OF MATHEMATICS. (3) Algebraic properties of the real number system; sets, relations, functions; graphing and solution of equations and inequalities; vectors and matrices; introduction to linear programming. (Credit not given to students having credit for MAT 103.)

MAT 103. CONCEPTS OF MATHEMATICS. (3) A study of the real number system including the basic field operations, the order relation and absolute value; solutions of equations and inequalities; sets,

functions and relations; graphing; brief treatment of trigonometry. Credit not given for Mathematics 101, 103A where credit is awarded for Mathematics 103.)

MAT 103A. CONCEPTS OF TRIGONOMETRY. (1) Prerequisite: placement by the Department of Mathematics. A brief study of the trigonometric functions; trigonometric identities; solution of equations and triangles; graphs of trigonometric functions. (Credit not given for both Mathematics 103 and 103A).

MAT 105. COMPUTATIONAL MATRIX ALGEBRA. (1) Prerequisite: None. An introduction to the solution of systems of linear algebraic equations. Basic properties of matrices and determinants will be introduced and several methods of solution for linear algebraic systems will be developed. The computational efficiency of the solution techniques will be compared. Further topics to include the algebra of complex numbers; two and three dimensional vector algebra, inner product and vector cross product. One lecture and one laboratory meeting per week.

MAT 120. CALCULUS. (3) Prerequisite: MAT 101 or 103. A brief treatment of basic concepts of differential and integral calculus with applications to business and to the social and life sciences; polynomial, exponential and logarithmic functions.

MAT 122. ELEMENTS OF STATISTICS. (3) Prerequisite: MAT 101 or 103. An introduction to the principles of statistical measures and hypothesis testing. Mean, variance, standard deviation; confidence intervals; binominal and normal distributions; contingency tables, chisquare test; nonparametric tests including the sign test and rank sum test, the t-test; linear regression correlation and an introduction to analysis of variance and multiple regression.

MAT 130. ELEMENTARY SCHOOL MATHEMATICS I. (3) A logical treatment of the structure of the number system and the basic ideas needed for teaching elementary school mathematics with emphasis on the concepts involved rather than the algorithms. (For elementary teacher candidates only.)

MAT 131. ELEMENTARY SCHOOL MATHEMATICS II. (3) Prerequisite: Mathematics 130. A continuation of Mathematics 130 with additional study in informal geometry.

MAT 141. DIFFERENTIAL AND INTEGRAL CALCULUS I. (4) Prerequisite: MAT 103. Limits, continuity of $R \longrightarrow R$ functions; differentiation and integration of rational functions; extreme values; concavity; curve sketching; velocity and acceleration; area; volumes of rotation; work; arc length.

MAT 142. DIFFERENTIAL AND INTEGRAL CALCULUS II. (4) Prerequisite: MAT 141 with a grade of *C* or better. Differential and integral calculus of transcendental functions (trigonometric, inverse trigonometric, exponential and logarithmic functions); methods of integration and further applications; indeterminate forms, improper integrals, series.

MAT 211. INTRODUCTION TO OPERATIONS RESEARCH. (3) Prerequisites: Mathematics 120 and Computer Science 100. Modeling and Graph Theory with applications to linear programming, critical path analysis, transportation and allocation problems, and queuing theory.

MAT 221. INTRODUCTION TO PROBABILITY. (3) Prerequisite: MAT 101 or 103. A study of the elements of probability theory. Sample spaces, events, probability of an event, conditional probability, independent events. Random variables, mean, variance and standard deviation, joint probability functions, independent random variables, sampling covariance and correlation, Binomial distribution and hypothesis testing.

MAT 241. DIFFERENTIAL AND INTEGRAL CALCULUS III. (3) Prerequisite: MAT 142 with a grade of *C* or better. Introduction to vector geometry; differential calculus of several variables, multiple integration; line integrals.

MAT 263. INTRODUCTORY MODERN ALGEBRA. (3) Prerequisite: MAT 103. The content is chosen to emphasize the axiomatic approach to algebraic structures through many concrete examples taken from rings, finite fields, polynomials and groups. The course is intended to familiarize the student with algebraic structures by emphasizing that abstract concepts arise from the analysis of concrete situations. It will also enhance transitions to more advanced algebra courses.

MAT 264. MATRICES AND LINEAR ALGEBRA. (3) Prerequisites: MAT 103. This course will emphasize the following topics: Algebra of Matrices, Solutions of Linear Equations, Abstract Vector Spaces, Determinants, Similarity of Matrices, Inner Products and unitary similarity, Quadratic forms. This course is intended to provide a firm foundation and working knowledge of these areas and will be of particular value to engineering and science majors as well as mathematics majors.

MAT 271. DIFFERENTIAL EQUATIONS. (3) Prerequisite: MAT 142 with a grade of *C* or better. An introduction to the study of differential equations; first order equations; general theory of ordinary linear differential equations; Laplace transform.

MAT 300. TOPICS IN FOUNDATIONS OR HISTORY OF MATHEMATICS. (2-3) Prerequisite: consent of the department. Topics in the foundations or the history of mathematics selected so as to supplement regular course offerings in this area of mathematics. Topics may be proposed by students and/or faculty and must be approved by the department. (May be repeated for additional credit with the approval of the department.)

MAT 310. TOPICS IN DECISION MATHEMATICS. (2-3) Prerequisite: consent of the department. Topics in decision mathematics selected so as to supplement regular course offerings in this area of mathematics. Topics may be proposed by students and/or faculty and must be approved by the department. (May be repeated for additional credit with the approval of the department.)

MAT 311. OPERATIONS RESEARCH I. (3) Prerequisites: MAT 120 and 122 with a grade of *C* or better. The first course of a two-semester sequence, including matrix algebra, convex sets, linear programming, queuing and the theory of games.

MAT 312. OPERATIONS RESEARCH II. (3) Prerequisite: MAT 311. A continuation of MAT 311.

MAT 320. TOPICS IN PROBABILITY AND STATISTICS. (2-3) Prerequisite: consent of the department. Topics in probability and statistics selected so as to supplement regular course offerings in this area of mathematics. Topics may be proposed by students and/or faculty and must be approved by the department. (May be repeated for additional credit with the approval of the department.)

MAT 322. PROBABILITY AND STATISTICS I. (3) Prerequisite: MAT 241 with a grade of *C* or better. Continuous and discrete sample spaces, continuous and discrete random variables, moments and moment generating function, functions of random variables, some standard distributions, multivariate variable, laws of large numbers, limit theorems, stochastic processes.

MAT 323. PROBABILITY AND STATISTICS II. (3) Prerequisite: MAT 322. Estimation, bias, consistency, efficiency, method of moments, maximum likelihood estimates, sufficient statistics, testing hypothesis, simple hypothesis, most powerful test, composite hypothesis, the power function, uniformly most powerful test, sequential tests, the sequential likelihood ratio test, some one sample problem, the classical chi-square test, the Kolmogorov-Smirnov test.

MAT 340. TOPICS IN ANALYSIS. (2-3) Prerequisite: consent of the department. Topics in analysis selected so as to supplement regular course offerings in this area of mathematics. Topics may be proposed by students and/or faculty and must be approved by the department. (May be repeated for additional credit with the approval of the department.)

MAT 341. ADVANCED CALCULUS OF ONE VARIABLE. (3) Prerequisites: MAT 241 and junior standing. Least upper bound principle; sequences; sequences of functions; topology of the real line; continuity and uniform continuity of functions; differential calculus; Riemann integration.

MAT 346. INTRODUCTION TO COMPLEX ANALYSIS. (3) Prerequisite: MAT 241 with a grade of *C* or better. Analytic function theory; complex integration; sequences; series; residue calculus and conformal mapping.

MAT 350. TOPICS IN MATHEMATICS. (2-3 semester hours credit. May be repeated for additional credit with the approval of the department.) Prerequisite: consent of the department. Topics chosen from such fields as set theory, linear algebra, geometry and probability. This course is designed to serve particular needs not served by other departmental offerings.

MAT 360. TOPICS IN ALGEBRA. (2-3) Prerequisite: consent of the department. Topics in algebra selected so as to supplement regular course offerings in this area of mathematics. Topics may be proposed by students and/or faculty and must be approved by the department. (May be repeated for additional credit with the approval of the department.)

MAT 363. MODERN ALGEBRA I. (3) Prerequisite: MAT 263 or consent of the department. The first course of a two semester sequence covering Groups, Rings, Fields extensions, roots of polynomials and the rudiments of Galois Theory.

MAT 364. MODERN ALGEBRA II. (3) Prerequisite: MAT 363. A continuation of MAT 363. Fields, vector spaces, linear transformations and canonical forms.

MAT 370. TOPICS IN APPLIED MATHEMATICS. (2-3) Prerequisite: consent of the department. Topics in applied mathematics selected so as to supplement regular course offerings in this area of mathematics. Topics may be proposed by students and/or faculty and must be approved by the department. (May be repeated for additional credit with the approval of the department.)

MAT 371. APPLIED MATHEMATICS I. (3) Prerequisite: MAT 271 and 241 with grades of *C* or better. Boundary value problems, separation of variables, Fourier series and Fourier transforms, orthogonal functions.
MAT 372. APPLIED MATHEMATICS II. (3) Prerequisites: MAT 371 with a grade of *C* or better. A continuation of MAT 371.

MAT 376. NUMERICAL ANALYSIS. (3) Prerequisites: Computer Science 100, MAT 241 and 271. A treatment of the numerical solution of initial value and boundary value problems in ordinary differential equations. An introduction to the numerical solution of partial differential equations. Direct and iterative methods of solving systems of equations will be developed. Selected problems will be programmed for computer solution.

MAT 380. TOPICS IN GEOMETRY-TOPOLOGY. (2-3) Prerequisite: consent of the department. Topics in geometry and/or topology selected so as to supplement regular course offerings in this area of mathematics. Topics may be proposed by students and/or faculty and must be approved by the department. (May be repeated for additional credit with the approval of the department.)

MAT 381. FUNDAMENTAL CONCEPTS OF GEOMETRY. (3) Prerequisites: MAT 264 and consent of the department. Foundations of geometry, affine geometry, comparison of Euclidean and non-Euclidean geometries.

MAT 383. INTUITIVE TOPOLOGY. (3) Prerequisite: MAT 241. Introduction to combinatorial topology; topology of En; winding number and applications; homotopies and the fundamental group.

MAT 391. SEMINAR. (1-6) Prerequisite: consent of the department. Readings, study and discussion designed to develop the student's ability to study independently and to present his results properly.

MAT 392. SEMINAR. (1-6) Prerequisite: consent of the department. A continuation of MAT 391.

MAT 409. HISTORY OF MATHEMATICAL THOUGHT. (3) Prerequisite: consent of the department. A study of the development of mathematics in its historical setting from the earliest beginnings to modern times.

MAT 443. ANALYSIS I. (3) Prerequisite: MAT 341 with a grade of *C* or better or consent of the department. An introduction to metric spaces, including properties of subsets, continuity of functions, pointwise and uniform convergence of functions.

MAT 444. ANALYSIS II. (3) Prerequisite: MAT 443. An introduction to Lebesgue integration and measure theory, starting with a construction of measure for closed and bounded intervals of R and extending to an axiomatic treatment of a general measure on abstract spaces.

MAT 450. SELECTED TOPICS IN MATHEMATICS. (2-3) Prerequisite: consent of the department. Topics chosen from such fields as topology, differential geometry, complex analysis, applied mathematics or modern algebra. May be repeated for credit with the approval of the department.

MAT 481. INTRODUCTION TO TOPOLOGY. (3) Prerequisite: MAT 383 or 341. Topics from set theory and point set topology such as cardinality, order, topological spaces, metric spaces, separation axiom, compactness and connectedness.

MAT 491. SEMINAR. (1-6) Prerequisite: consent of the department. Individual investigation and appropriate exposition of the results.

MAT 492. SEMINAR. (1-6) Prerequisite: consent of the department. A continuation of MAT 491.

The Honors Program in Mathematics

The overall purpose of this program is to stimulate the imagination of the student by encouraging independent study and by freeing him to a certain extent from the more structured program which leads to a B.A. or B.S. in Mathematics. The program in honors will be kept as flexible as possible to allow students with different interests and abilities to benefit from it.

Any student may request entrance into the honors program at any time. A student in any one of the honors courses shall receive a grade of *Pass Honors*, *Pass*, or *No Credit*. The minimum required to obtain Honors in Mathematics is participation in two semesters of the Senior Honors Tutorial with a grade of *Pass Honors*, completion of a thesis and examination of the candidate by the Honors Committee of the Department of Mathematics upon his honors work.

MAT 190 H. FRESHMAN HONORS SEMINAR. (2) Prerequisite: consent of the department. An introduction to independent study.

MAT 290 H. SOPHOMORE HONORS SEMINAR. (2) Prerequisite: consent of the department. Further independent study.

MAT 390 H. JUNIOR HONORS SEMINAR. (2) Prerequisite: consent of the department. (May be repeated once for additional credit with approval of the department.

MAT 490 H. SENIOR HONORS TUTORIAL. (3) Prerequisite: consent of the department. Individual tutorials in which the student will pursue independent study and research in any area of mathematics under the direction of one or more faculty members. The project of the student will be planned to culminate in a research paper of original or expository nature.

Option in Computer Science

The major for the B.A. degree with an option in Computer Science consists of a minimum of 17 hours of mathematics and a minimum of 27 additional hours in computer science or related mathematics courses. Of the latter, at least 12 hours must be in courses numbered 300 or above and must include a three-hour Senior Project (CSC 450). A quality point average of 2.0 or better is also required. The program of courses presented for the major must be approved by the department.

The major for the B.S. degree with an option in Computer Science consists of a minimum of 20 hours of mathematics and a minimum of 36 additional hours in computer science or related mathematics courses. Of the latter, at least 18 hours must be in courses numbered 300 or above and must include a six-hour Senior Project (CSC 450 and 451). A quality point average of 2.0 or better is also required. The program of courses presented for the major must be approved by the department.

An elective minor is required for both the B.A. and the B.S. and consists of at least 15 hours of courses other than computer science courses; the minor program must also be approved by the department.

CURRICULUM OUTLINE FOR THE B.A. OPTION IN COMPUTER SCIENCE

FRESHMAN YEAR

Mathematics 141	4	Mathematics 142	4
Computer Science 100	3	Computer Science 160	3
English 101	3	English 102	3
Science	4	Science	4
	14		14

SOPHOMORE YEAR

Mathematics 264	3	Mathematics Core	3
Computer Science 240	3	Computer Science	3
Social Science	3	Social Science	3
Humanities	3	Humanities	3
Minor	3	Minor	3
	15		15

JUNIOR YEAR

Mathematics Core	3	Computer Science 343 (361)	3
Computer Science	3	Minor	3
Minor	3	Electives	10
Electives	7		16
	16		

SENIOR YEAR

Computer Science Elective	3	Computer Science 361 (or 343)	3
Senior Project	3	Elective	3
Minor	3	Minor	3
Electives	6	Electives	6
	15		15

CURRICULUM OUTLINE FOR THE B.S. OPTION IN COMPUTER SCIENCE

FRESHMAN YEAR

Mathematics 141	4	Mathematics 142	4
Computer Science 100	3	Computer Science 160	3
English 101	3	English 102	3
Science	4	Computer Science 111 (or 112)	1
	14	Science	4
			15

SOPHOMORE YEAR

Mathematics 264	3	Mathematics Core	3
Computer Science 240	3	Computer Science 241	3
Computer Science 273	3	Computer Science 212	3
Humanities	3	Humanities	3
Minor	3	Minor	3
	15		15

JUNIOR YEAR

Mathematics Core	3	Mathematics Core	3
Computer Science 341	3	Computer Science 343 (or 361)	3
Computer Science 223	3	Social Science	3
Social Science	3	Minor	3
Minor	3	Electives	4
	15		16

SENIOR YEAR

Computer Science Elective	3	Computer Science 343 (or 361)	3
Senior Project	3	Senior Project	3
Minor	3	Minor	3
Electives	6	Electives	6
	15		15

COURSE DESCRIPTIONS

COMPUTER SCIENCE

CSC 100. ALGORITHMIC LANGUAGES I. (3) Prerequisites: MAT 101 or 103. An introduction to digital computing techniques through the study of FORTRAN IV. Various numerical and non-numerical algorithms will be studied, flowcharted, programmed and documented. Concepts such as computer hardware, computer application areas, etc. will be introduced when appropriate. Four classroom hours per week. Cannot be taken for credit if CSC 101 or 102 are taken for credit.

CSC 101. INTRODUCTION TO COMPUTER CONCEPTS. (3) Prerequisite or corequisite: MAT 101 or 103. Covers the development of the digital computer and its applications. Specific topics include: flowcharting, data representation, card readers, printers, disks, tapes, central processing units, batch processing, time-sharing, recent hardware and software developments and an introduction to programming languages. Cannot be taken for credit if CSC 100 is taken for credit.

CSC 110. FORTRAN PROGRAMMING. (1) Prerequisite: CSC 101 or consent of department. Various numerical and non-numerical algorithms studied, flowcharted, programmed in FORTRAN IV and computer tested. One lecture and one lab hour per week. Cannot be taken for credit if CSC 100 is taken for credit.

CSC 111. COBOL PROGRAMMING. (1) Prerequisite: CSC 100 or CSC 101 or consent of the department. Various numerical and non-numerical algorithms studied, flowcharted, programmed in COBOL and computer tested. One lecture and one lab hour per week.

CSC 112. ALGOL PROGRAMMING. (1) Prerequisite: CSC 100 or CSC 101 or consent of the department. Various numerical and non-numerical algorithms studied, flowcharted, programmed in ALGOL and computer tested. One lecture and one lab hour per week.

CSC 160. DATA BASE DESIGN AND IMPLEMENTATION. (3) Prerequisite: CSC 100 or 11x or consent of the department. An introduction to the design of large data files. The implementation of these files in an appropriate programming language and their applications. Emphasis will be on advanced programming techniques with participation in the actual construction of a file system.

CSC 212. A COMPARATIVE STUDY OF PROGRAMMING LANGUAGES. (3) Prerequisite: two courses from CSC 100, CSC 110, CSC 111, CSC 112 or consent of the department. Numeric and non-numeric algorithms in the procedural languages, COBOL, ALGOL, etc.; discussion and comparison of the relative strengths and weaknesses of the various representative programming languages and appropriate areas of application.

CSC 223. INTRODUCTION TO NUMERICAL METHODS. (3) Prerequisite: CSC 100 or CSC 110 or CSC 112 and MAT 142. Solutions of equations; interpolation and approximations; numerical differentiation and integration; and numerical solution of initial value problems in differential equations. Selected algorithms will be programmed for the digital computer.

CSC 240. MACHINES AND SYSTEMS. (3) Prerequisite: CSC 160 or two courses from CSC 100, CSC 110, CSC 111, CSC 112 or consent of the department. Computer structure, addressing techniques, symbolic coding, macros, internal representations and assembly systems.

CSC 241. SYSTEMS PROGRAMMING. (3) A continuation of CSC 240. Program segmentation and linkage, loaders, reentrant coding, interrupts and traps, resource allocation, pushdown stores and construction of assemblers and input/output routines.

CSC 273. LOGIC AND ALGORITHMS. (3) Prerequisite: sophomore standing. Set algebra; elements of the theory of graphs; Boolean Algebra; propositional logic; and Markov Algorithms and Turing machines.

CSC 341. COMPUTER ORGANIZATION. (3) Prerequisite: CSC 241 or CSC 240 and consent of the department. Basic digital components; data representation and transfer; digital storage and accessing; control functions; input/output facilities; machine description, organization, simulation. Survey of various computer architectures.

CSC 343. ADVANCED SYSTEMS PROGRAMMING. (3) Prerequisite: CSC 341. Batch processing, multiprogramming, multiprocessing and real-time systems. Structure of operating systems, parallel processing of input/output and interrupt handling, information sharing, virtual memory, and virtual machines.

CSC 361. INFORMATION STRUCTURES. (3) Prerequisite: CSC 341. Description of a data base and its structure; concepts of records, files, trees, and lists; sorting, searching and merging of information files, referencing and cross referencing of files.

CSC 390. SEMINAR. (1-6) Prerequisite: junior standing plus consent of the department.

CSC 391. SEMINAR. (1-6) Prerequisite: junior standing plus consent of the department. A continuation of CSC 390.

CSC 450. SENIOR PROJECT. (3) Prerequisite: senior standing or consent of the department. An individual research project under the direction of a faculty member. The project shall have the teaching, theory or application of computer sciences as its main emphasis and shall be of benefit to the department, university or urban community. The project shall be approved by a departmental committee before it is initiated and the results reviewed by the committee before a grade is assigned.

CSC 451. SENIOR PROJECT. (3) Prerequisite: CSC 450. A continuation of CSC 450.

DEPARTMENT OF PHYSICS

Chairman: Professor Pollak
Associate Professors: Mayes, Oberhofer, Vermillion
Assistant Professors: Corwin, Melton
Lecturers (Part-time): Lipham, Niccolai

A major in physics leading to the B.A. degree consists of a minimum of 120 semester hours which fulfill the general degree requirements of the University. A minimum of 32 semester hours in physics with an average grade of *C* in the major area is required. The minimum 32 hours must include Physics 221, 222, 231, 241, 251, 252, 291, 491 and at least nine additional hours at the 300/400 level.

A major in physics leading to the B.S. degree consists of a minimum of 120 semester hours which fulfill the general degree requirements of the University. A minimum of 43 semester hours in physics with an average grade of *C* in the major area is required. The minimum 43 hours must include Physics 221, 222, 231, 241, 251, 252, 291, 321, 331, 341, 351, 361 or 371, 491 and at least six additional hours at the 300/400 level to be approved by the department.

For either program a first-year sequence of Physics 101 and 102, or Chemistry 101 and 102 is recommended. Students should note that Mathematics 141, 142, 241, 271 or their equivalents are prerequisites for various required physics courses. Freshmen should arrange their mathematics schedule so as to complete Math 141 before beginning the sophomore year.

COURSE DESCRIPTIONS

PHYSICS

Astronomy

PHY 103. INTRODUCTION TO ASTRONOMY. (4) Historical beginnings of astronomy. Motions of celestial bodies. Introduction to space science. The solar system. Optical and radio astronomy. Structure and evolution of stars. Galaxies, cosmology. Three lecture hours and one three-hour laboratory each week.

Physics

PHY 101. INTRODUCTORY PHYSICS I. (4) Introduction to the fundamental principles of natural phenomena. Topics will be selected from traditional classical subjects (e.g., Newtonian mechanics, electromagnetism) and more recent developments in order to illustrate the logical structure of modern science. Three lecture and three laboratory hours each week.

PHY 102. INTRODUCTORY PHYSICS II. (4) Prerequisite: PHY 101. A continuation of PHY 101. Three lecture and three laboratory hours each week.

PHY 105. BASIC CONCEPTS AND TEACHING METHODS IN PHYSICAL SCIENCE. (4) Intended primarily for students in teacher education. Content, processes and attitude of science are explored, along with methods for teaching science to children. Topics include basic scientific concepts such as energy, interaction, relativity of motion, scientific model, as well as teaching strategies and their relationship to theories of learning and development, such as Piaget's theory. May not be counted toward the eight hour general degree requirement in natural science. Six laboratory/class hours per week.

PHY 221. DYNAMICS. (3) Prerequisite: MAT 141. Kinematics and dynamics of particles; momentum, work, energy; conservation laws, mechanics of rigid bodies. Three lecture hours a week.

PHY 222. WAVES AND THERMAL PHYSICS. (3) Prerequisites: PHY 221 or ESM 241; MAT 142. Fluid mechanics and elastic properties of matter; oscillations and waves in elastic media; sound; heat and an introduction to thermodynamics and the kinetic theory of gases. Three lecture hours a week.

PHY 231. ELECTRICITY AND MAGNETISM. (3) Prerequisites: PHY 221 or 222; MAT 142. Electric and magnetic fields in free space and in matter; electrostatic potential and capacitance; elementary circuit theory; electromagnetic induction and inductance; introduction to Maxwell's equations. Three lecture hours a week.

PHY 241. INTRODUCTION TO MODERN PHYSICS. (3) Prerequisites: PHY 102 or PHY 231; MAT 120 or MAT 141. An introduction to such topics as the atomic structure of matter, quantum physics, electronic structure of atoms, wave nature of matter, physics of the solid state, nuclear structure, radioactive decay, fission and fusion, and special relativity. Three lecture hours a week.

PHY 251. EXPERIMENTAL PHYSICS I. (1) Corequisite: PHY 221. The first course of a laboratory sequence developing toward open-ended experiments designed to illustrate physical principles, to develop experimental technique and to encourage individual investigation by the student. PHY 251 involves chiefly experiments in classical mechanics. One three-hour laboratory each week.

PHY 252. EXPERIMENTAL PHYSICS II. (2) Prerequisite: PHY 251. Corequisite: PHY 231. Experiments in electricity and magnetism. One three-hour laboratory each week.

PHY 290. SEMINAR I. (0) Films, lectures, demonstrations and reports on recent developments in physics, historical reviews of specific areas, student and faculty projects or research. A term paper or other presentation may be required. Meets once every other week. May be repeated.

PHY 291. SEMINAR II. (1) Prerequisite: PHY 290. Continuation of PHY 290. A term paper or other presentation will be required in most cases. May be repeated for up to two hours of credit.

PHY 311. A.C. CIRCUITS AND ELECTRONICS. (4) Prerequisites: PHY 231 and PHY 252. An introduction to A.C. circuit theory and electronics with an emphasis on the function and behavior of the individual components of an electronic circuit. Two hours of lecture and one three-hour laboratory each week.

PHY 321. CLASSICAL MECHANICS I. (3) Prerequisites: PHY 221; MAT 241 and 271. The first course of a two-semester sequence treating particle dynamics, the motion of systems of particles, rigid body motion, moving coordinate systems, Lagrange's equations, Hamilton's equations and small oscillations. Three lecture hours a week.

PHY 331. ELECTROMAGNETIC THEORY I. (3) Prerequisites: PHY 231; MAT 241 and 271. The first course of a two-semester sequence. Topics considered include electrostatics and magnetostatics in free space and in matter, the motion of charged particles in electric and magnetic fields, capacitance, dielectric theory, field energy, electromagnetic induction and inductance, vector and scalar potentials, magnetic properties of matter, Maxwell's equations, solutions of Maxwell's equations in free space and in matter, propagating electromagnetic waves, and boundary value problems. Three lecture hours a week.

PHY 341. QUANTUM PHYSICS I. (3) Prerequisites: PHY 231 and 241, MAT 241 and 271, or consent of the department. Empirical necessity for quantum physics. Postulates of quantum physics. Analytical study of quantum physics of the atom. Three lecture hours a week.

PHY 345. STATISTICAL PHYSICS. (3) Prerequisite: PHY 231 and 241, or consent of the department. Introduction to the microscopic foundations for macroscopic systems. Kinetic theory and introductory statistical mechanics. Three lecture hours a week.

PHY 351. ADVANCED LABORATORY IN WAVES AND OPTICS. (2) Prerequisites: PHY 252. Selected laboratory work primarily in geometrical optics, physical optics and microwaves. Three hours of laboratory each week.

PHY 361. ADVANCED LABORATORY IN MODERN PHYSICS. (2) Prerequisites: PHY 241 and PHY 252, or PHY 241 and consent of department. Selected laboratory work in such areas as atomic spectra, radioactive decay, and the interaction of radiation with matter. Three hours of laboratory each week.

PHY 371. ADVANCED LABORATORY IN MECHANICS. (2) Prerequisites: PHY 252. Selected laboratory work in the area of classical mechanics. Topics are chosen for their relation to important principles and techniques or for their historical significance. Three hours of laboratory each week.

PHY 395. TOPICS IN PHYSICS. (0-4 semester hours credit. May be repeated with approval of the department.) Prerequisite: consent of the department. Used to comply with requests for special topics which are introductory in nature.

PHY 397. INTERNSHIP IN COMMUNITY EDUCATION AND SERVICE. (3) Prerequisites: junior standing, acceptance into the internship program, and approval by the Physics Department. Corequisite: SBS 398. A project oriented, service-learning internship with cooperating community organizations. Credit toward departmental requirements in physics will not be granted for this course. May be repeated once with permission of the Physics Department. This course is offered on a pass/no-credit basis.

PHY 411. NUCLEAR PHYSICS. (3) Prerequisites: PHY 231 and 241, and MAT 271. A study of the nucleus, radioactivity, nuclear reactions, fission, fusion, interactions of radiation with matter, and measurement of radiation. Three hours lecture per week.

PHY 421. CLASSICAL MECHANICS II. (3) Prerequisite: PHY 321. Continuation of PHY 321. Three lecture hours a week.

PHY 431. ELECTROMAGNETIC THEORY II. (3) Prerequisite: PHY 331. Continuation of PHY 331. Three lecture hours a week.

PHY 441. QUANTUM PHYSICS II. (3) Prerequisite: PHY 341. Continuation of PHY 341 with selected applications from atomic, molecular, solid state and nuclear physics. Three lecture hours a week.

PHY 490. SEMINAR III. (0) Continuation of PHY 290 and 291. May be repeated.

PHY 491. SEMINAR IV. (1) Prerequisite: PHY 490. Continuation of PHY 490. May be repeated for up to two hours of credit.

PHY 495. SELECTED TOPICS IN PHYSICS. (0-4 semester hours credit. May be repeated with approval of the department.) Prerequisite: consent of the department. Used to comply with requests for more advanced special topics.

College of Social and Behavioral Sciences

Dean: Professor Schul

The College of Social and Behavioral Sciences includes the Criminal Justice Program, the Service-Learning Internship Program, the Venture Program and the departments of Geography and Earth Sciences, Political Science, Psychology, and Sociology and Anthropology.

SERVICE-LEARNING INTERNSHIP PROGRAM

Program Coordinator: Assistant Professor Arrington

The service-learning Internship Program in Community Education and Service is designed as an area-wide academic program with credit in the College of Social and Behavioral Sciences.

The following are the overall objectives of the internship program:

—To identify relationships between the student's academic program and the problems and prospects of modern urban communities.

—To enable students to become involved in solving problems of the urban community.

—To provide manpower for governmental and service agencies in local metropolitan communities.

—To encourage youth to consider careers and/or citizen leadership in urban administration and service. To establish a closer relationship between institutions of higher education and the Charlotte area communities by making the resources of the University more accessible to the community and by providing a basis for keeping curriculum, teaching, and research relevant to the needs of the community and society.

Interns will receive six semester hours of academic credit, with grading on a *P/NC* basis, for their completion of the Program in Community Education and Service by enrolling in the following courses in the College of Social and Behavioral Sciences (SBS) at the University of North Carolina at Charlotte:

COURSE DESCRIPTIONS

SBS 397. INTERNSHIP IN COMMUNITY EDUCATION AND SERVICE. (3) Prerequisites: junior standing, acceptance into the program and approval of the student's major department. Corequisite: SBS 398. A project-oriented, service-learning internship with cooperating community organizations.

SBS 398. SEMINAR IN COMMUNITY EDUCATION AND SERVICE. (3) Corequisite: SBS 397 or participation in a service-learning situation approved by the College of Social and Behavioral Sciences. A forum for the analysis of needs in the urban community and the responses being generated to meet them. Interpreting the relationship between internship experiences in terms of the service-learning concept.

NOTE: The student intern's major department has the option of recognizing this credit as fulfilling departmental requirements and granting permission to repeat for credit. Student interns not regularly enrolled at the University of North Carolina at Charlotte are responsible for arranging for transfer of credit with their home institution. Student interns not regularly enrolled at the University of North Carolina at Charlotte should request in writing to be evaluated by a letter grade upon acceptance into the program if a letter grade is required by their home institution.

The Pass/No Credit evaluation does not apply against the four courses allowed on a Pass/No Credit option for UNCC students.

For further information concerning this program, contact the Office of the Dean, College of Social and Behavioral Sciences.

VENTURE PROGRAM

Program Director: Lecturer Griffin

This program is an experiential learning process which attempts to meet several fundamental needs complementary to the student's education. It utilizes a wilderness setting and small-group dynamics in order to increase the student's understanding of self, interpersonal relationships and the environment.

COURSE DESCRIPTION

SBS 399. VENTURE. (3) An Outward Bound-type of experience which utilizes a wilderness setting and small-group dynamics in order to increase the student's understanding of self-interpersonal relationships and the environment. The course is action-oriented with one experience building upon another. The emphasis is on an interdisciplinary approach.

NOTE: The student's major department has the option of recognizing this credit as fulfilling departmental requirements. Evaluation will be on a *Pass/No Credit* basis which does not apply against the four courses allowed on a *Pass/No Credit* option for UNCC students.

For further information concerning this program, contact the Office of the Dean, College of Social and Behavioral Science, or Venture Program, Cone University Center.

CRIMINAL JUSTICE PROGRAM

Director: Assistant Professor Adams
Visiting Assistant Professor: Johnson

Students desiring the academic study of crime, delinquency, and the criminal justice system, a career in the criminal justice field, or preparation for graduate study may select the criminal justice curriculum, leading to a Bachelor of Science degree. A major in criminal justice requires 30 semester hours of criminal justice courses, including CJ 300—General Criminal Justice, CJ 301—Criminal Justice Theory, and CJ 302—Research Methods in Criminal Justice. Criminal justice majors must complete a concentration in Corrections, Criminal Justice Planning and Administration, or Criminal Justice Research and Evaluation. Concentrations require criminal justice courses and courses from other disciplines. Students may satisfy the requirement for a concentration by the completion of an associate degree in a criminal justice area at a community college or technical institute, and six hours of approved 300 or 400 level criminal justice coursework. Twelve hours of criminal justice coursework at a community college or technical institute may be counted toward the 30 semester hours of required criminal justice courses.

Criminal justice majors must also complete 15 hours of approved related work in accounting, economics, geography, philosophy, political science, psychology, religion, or sociology.

COURSE DESCRIPTIONS

CRIMINAL JUSTICE

CJ 300. GENERAL CRIMINAL JUSTICE. (3) Prerequisite: junior standing. All components of the criminal justice system are reviewed and their interrelatedness assessed. Empirical description and tests of the various segments of the system are covered. The role of criminal justice practitioners as professionals is discussed.

CJ 301. CRIMINAL JUSTICE THEORY. (3) Prerequisite: junior standing. Some empirical tests of theories and consideration of theory construction are included. This course focuses upon theories of the criminal justice system as a system and gives particular attention to the systemic relationship between its component parts, inputs, conversion processes, outputs and feedbacks.

CJ 302. RESEARCH METHODS IN CRIMINAL JUSTICE. (4) Prerequisite: junior standing, one statistics course or social measurement course and CJ 300 or consent of instructor. The development of research designs, data collection methods and data analysis most relevant to criminal justice are covered. Traditional criminal justice statistics are discussed. Emphasis is placed on sources of criminal justice information and the skills involved in a thorough criminal justice literature review. There is a focus on research problems of particular interest to the criminal justice system and on unique constraints operating on research within that system. Three lecture hours and one laboratory period of two hours a week.

CJ 438. JUVENILE JUSTICE SUBSYSTEMS. (3) Prerequisite: junior standing. The nature, sources and types of laws concerning juveniles are considered. The focus is on legal bases of delinquency and the role of juvenile justice as a subcomponent of the larger criminal justice system. Particular attention will be given the systemic linkages of the juvenile justice system and the problems of interfacing the juvenile justice system with the larger criminal justice system.

CJ 439. CRIMINAL JUSTICE AND THE LAW. (3) Prerequisite: junior standing. This course examines the nature, origins and objectives of the criminal sanction as it is developed and applied by the criminal justice system. It places particular emphasis upon the roles played by statutory and procedural law in the area of law enforcement, prosecution and corrections.

CJ 449. ETHICS AND THE CRIMINAL JUSTICE SYSTEM. (3) Prerequisite: junior standing. The course focuses on ethical issues related to the administration of justice.

CJ 459. APPLIED CRIMINAL JUSTICE RESEARCH. (3) Prerequisite: one research methods course and junior standing. Significant research studies of criminal justice programs, policies and agencies are evaluated, with special attention to methodological matters. Emphasis is placed on the pragmatic implications of the research findings.

CJ 469. CRIMINAL JUSTICE PLANNING AND ADMINISTRATION. (3) Prerequisite: junior standing and one planning or administration course. Individual and group studies in the dynamics of crimlnal justice administration and planning are covered, emphasizing the social and psychological aspects of organization and management. Policy formulation personnel supervision and planning in a criminal justice agency are discussed. Special problems of local, state, regional and national criminal justice planning agencies are considered.

CJ 478. COMMUNITY CORRECTIONS SUBSYSTEMS. (3) Prerequisite: junior standing. The structure, functions and effectiveness of community corrections are considered. Techniques in clinical criminal justice and the impact of community corrections on other elements of the criminal justice system are discussed.

CJ 479. INSTITUTIONAL CORRECTIONS SUBSYSTEMS. (3) Prerequisite: junior standing. The structure, functions and effectiveness of institutional corrections are considered. Techniques in clinical criminal justice and the impact of institutional corrections on other elements of the criminal justice system are discussed.

CJ 488. LAW ENFORCEMENT SUBSYSTEMS. (3) Prerequisite: junior standing. The organization and operation of law enforcement and security agencies are considered. Particular attention is given to the relationship between law enforcement subsystems and other components of our system of criminal justice. The evolving role of law enforcement and its position in theories of social control are discussed.

CJ 489. LAW ENFORCEMENT AND COMMUNITY RELATIONS. (3) Prerequisite: junior standing. Factors contributing to cooperation or friction between law enforcement personnel and the community, with an emphasis on minority groups, social pressures, and cultural problems, are discussed.

CJ 490. CRIMINAL JUSTICE PRACTICUM. (1-6) Prerequisite: consent of the instructor and the criminal justice agency, and CJ 300. Supervised exposure to a criminal justice problem of special interest to the student. May be repeated for credit up to a maximum of six total hours.

CJ 495. DIRECTED INDIVIDUAL STUDY. (1-4) Prerequisite: junior standing, consent of the director, and one 300-level CJ course. Supervised investigation of a criminal justice problem of special interest to the student. May be repeated for credit.

CJ 499. TOPICS IN CRIMINAL JUSTICE. (1-6) Prerequisite: consent of the program. Examination of specialized criminal justice topics selected by students and faculty. May be repeated for credit.

DEPARTMENT OF GEOGRAPHY AND EARTH SCIENCES

Chairman: Professor Stuart
Professors: Clay, Schul
Associate Professors: Nunnally, Orr
Assistant Professors: Bedford, Catau, Ingalls, Keller, Lord, Swanson, Walcott, Watson
Instructors: Kutsche, Simpson
Lecturers (part-time): Anderson, Liston

The department offers two majors, one in Geography, the other in Earth Science.

Geography Major

A major in Geography leading to the B.A. Degree consists of 28 hours of Geography and Earth Sciences and will include Geography 102, 105, 202 and 203 and Earth Science 101. Except for required courses, all work offered for the major must be in courses numbered 300 or above. Majors are expected to take additional work in computer science, economics, history, political science, sociology and statistics or other related areas. Any student who wishes to pursue graduate study in Geography or to be recommended for non-teaching professional employment in the field should expect to take Geography 450.

Students who are working toward teacher certification may elect to take a modified program under which Geography 202 and 203 are not required and may be substituted for by any other six hours of 300 or higher numbered course work in Geography (but not in Earth Sciences).

Earth Science Major

A major in Earth Science leading to the B.A. Degree consists of a minimum of 35 semester hours and will include Earth Science 101, 102 and 340. The remaining 24 hours will be selected from other Earth Science courses and/or from an approved list of related Geography courses. The selection of other courses for the major and in related work is to be made by the student in consultation with his adviser, based primarily on the student's interest in one of the four program options:

(1) General Earth Science—a liberal arts option for the non-career oriented student.
(2) Preparation for Graduate Study—students interested in advanced work in geology, meteorology, oceanography or physical geography should complete the appropriate selection of courses in the major plus at least mathematics through calculus, one year of physics and one year of chemistry.
(3) Teacher Certification—students who plan to teach earth science should take a broad selection of courses within the major as well as meet established teacher certification requirements.
(4) Applied Earth Sciences—students interested in earth sciences as they apply to human prohlems can develop plans of study which range from broad environmental planning considerations to applications of earth science technologies. Related work should be taken in mathematics, the natural sciences, engineering and the planning aspects of the social sciences.

GEOGRAPHY

GGY 102. WORLD REGIONAL GEOGRAPHY. (3) A world regional study which emphasizes the distinctly human responses of man to various geographic situations throughout the world. The nature and development of cultural regions will be studied.

GGY 105. THE LOCATION OF HUMAN ACTIVITY. (3) An examination of factors which account for the locational characteristics of economic and other human activities. The locational decision-making process is examined as a means of understanding human spatial behavior.

GGY 202. ELEMENTARY CARTOGRAPHY. (3) Emphasis to be focused on tools of map making, map design and construction and the interpretation of aerial photographs and topographic maps. One lecture hour and two laboratory periods of two hours a week.

GGY 203. INTRODUCTION TO GEOGRAPHIC RESEARCH. (3) An examination of research design and resources in geographic study including emphasis on spatial models and other quantitative tools applicable to geographic research.

GGY 301. GEOGRAPHY OF LATIN AMERICA. (3) A regional study of the basic human and physical differences from place to place which affect economic, social and political conditions of the Latin American countries.

GGY 302. GEOGRAPHY OF POLAR REGIONS. (3) A study of the Arctic and Antarctic regions with particular emphasis on the history of exploration, the physical environment and political significance.

GGY 303. GEOGRAPHY OF ANGLO-AMERICA. (3) The geographic structure of the United States and Canada with emphasis on both the physical environment and the patterns of human activities.

GGY 304. GEOGRAPHY OF NORTH CAROLINA. (3) A study of physical, social and economic patterns in North Carolina.

GGY 305. GEOGRAPHY OF EUROPE. (3) A regional study of geographic conditions and their relationship to economic, social and political problems of Europe.

GGY 308. GEOGRAPHY OF EAST ASIA. (3) A regional study emphasizing the relationships that exist between the physical environment and the cultural patterns in geographic regions of China, Korea, Japan and the nations of Southeast Asia.

GGY 309. GEOGRAPHY OF SOUTH AND SOUTHWEST ASIA. (3) A regional study emphasizing the relationships that exist between the physical environment and the cultural patterns in geographic regions of the Indian subcontinent and the Arabian peninsula.

GGY 311. POLITICAL GEOGRAPHY. (3) A study of the concepts of political geography as developed through topical studies of political phenomena as related to geographical features. Contemporary problems in international affairs will be considered.

GGY 312. POPULATION GEOGRAPHY. (3) A study of spatial variations in the size, composition, distribution and growth of population. The causes and implications of geographic differences in fertility, mortality and especially migration are discussed.

GGY 313. MANUFACTURING GEOGRAPHY. (3) A study of factors relating to the nature, locations and development of manufacturing industries. Emphasis upon classification of manufacturers, principal areas of manufacturing and the role of manufacturing in regional development.

GGY 314. RESOURCE PLANNING. (3) A study of the resources of the world, especially as they pertain to population, their use and misuse and present conservational practices as they relate to planning for future resource adequacy.

GGY 315. THE REGION AND PLANNING. (3) The regional concept and its application to urban and regional planning. Emphasis to be upon the techniques used in regional analysis.

GGY 316. GEOGRAPHY OF TERTIARY ACTIVITY. (3) A study of spatial attributes of retail and wholesale activities, service facilities and financial establishments. Emphasis upon location research and delineation of trade and service areas.

GGY 317. THE GEOGRAPHY OF TRANSPORTATION SYSTEMS. (3) The study of those geographical and human factors which affect the movement of goods and people from place to place. Emphasis will be placed on transportation routes and networks, commodity flow patterns and the locational implications of freight rates.

GGY 318. GEOGRAPHY OF PRIMARY ACTIVITIES. (3) A study of the functional and spatial attributes of primary economic activities, including agriculture, fossil fuels and other minerals, forestry and fisheries. Emphasis upon a models approach.

GGY 319. GEOGRAPHY OF INDUSTRIAL ACTIVITY. (3) The analytical study of the principles that affect the geographic distribution of manufacturing activity. Emphasis will be on theory, model building and the practical application of theory to geographic research. Also covered will be the role of industrial activity in regional development and planning. Although not required, students should generally plan to take GGY 313 first.

GGY 320. THE CITY AND ITS REGION. (3) A study of the regional system of cities in terms of their size, spacing, historical evolution, functional relationships and future prospects.

GGY 321. INTERNAL STRUCTURE OF THE CITY. (3) An integrative study of the spatial structure of cities with emphasis on land use patterns and models, transportation systems, residential concentrations, commercial activities and manufacturing zones.

GGY 323. BEHAVIORAL GEOGRAPHY. (3) A study of various information processing and decision making models that affect locational choices. The primary emphasis is on the application of these models to the analysis of environmental preferences, human behavior in natural hazard zones, urban social and economic locational behavior and landuse planning.

GGY 331. AIR PHOTO INTERPRETATION. (3) The examination and interpretation of aerial photographs with the aid of stereoscopes. Emphasis is to be placed on the identification of physical and cultural features and their patterns. One lecture hour and two laboratory periods of two hours a week.

GGY 332. ADVANCED CARTOGRAPHY. (3) Prerequisite: GGY 202. Preparation of maps, figures and charts at a professional level of competence. Techniques to be emphasized include scribing and various related photographic processes in addition to conventional pen and ink methods. Two laboratories of three hours each week.

GGY 350. ADVANCED GEOGRAPHIC ANALYSIS. (3) Prerequisite: GGY 203 or consent of instructor. An examination of advanced analytical methods in geography. The course will include multi-variate analysis and complex spatial models. Course will include computer usage.

GGY 402. SELECTED TOPICS IN GEOGRAPHY. (3) Prerequisite: consent of instructor. An intensive study of topics in geography. Topics will be offered from such areas as urban, manufacturing, tertiary activity, transportation, primary activity and political geography. Topics will vary from semester to semester. May be repeated for credit.

GGY 450. INDIVIDUAL STUDY IN GEOGRAPHY. (1-4) Permission of department must be obtained and credit hours established in advance. May be repeated for credit. Tutorial study of special research problems.

EARTH SCIENCE

ES 101. EARTH SCIENCE-GEOGRAPHY. (4) A study of basic geographical principles and processes in earth science; the earth—its position and motions; the grid system; weather; climate; the waters; soils; and vegetation. Three lecture hours and one period in the audio-visual-tutorial lab every week.

ES 102. EARTH SCIENCE-GEOLOGY. (4) A study of the basic geological principles and processes in earth science; the earth as a planet; treatment of physical processes shaping the earth; earth materials and landforms. Three lecture hours and one laboratory period of two hours a week.

ES 330. BIOGEOGRAPHY. (3) An introduction to the biosphere with focus on structure, processes and patterns. Three hours per week with occasional field work integrated into course.

ES 535. SOIL SCIENCE. (3) Application of soil processes to management and use of soils. Three hours per week with occasional field work integrated into course.

ES 340. FIELD METHODS IN THE EARTH SCIENCES. (3) Prerequisite: ES 101 and 102 or consent of instructor. Introduction to field techniques used in geology, geomorphology, hydrology, soil science and vegetation surveys. Two hours of lecture and one three-hour lab per week.

ES 341. NATURAL ENVIRONMENTS OF NORTH AMERICA. (3) A study of the physiographic regions of the United States, the genesis and pattern of the major landforms included within each, their distinctive characteristics and their cartographic interpretation.

ES 342. METEOROLOGY. (3) An introduction to atmospheric phenomena, weather producing processes, weather forecasting and weather effects upon man's activities.

ES 343. WEATHER ANALYSIS LABORATORY. (1) Pre-or corequisite: ES 342 or consent of instructor. An introduction to weather observation and techniques of weather forecasting. One two-hour lab per week.

ES 345. MICROCLIMATE: URBAN ENVIRONMENTS. (3) ES 101 or introductory physics are recommended. Principles of micrometerology/climatology using examples from urbanized areas. Analysis of local-scale climates and man-made modification of these environments.

ES 346. CLIMATOLOGICAL DATA ANALYSIS. (1) Prerequisite: GGY 203 or Statistics. Pre-or corequisites: ES 342 or ES 345 or ES 347 or consent of instructor. Methods of acquiring and analyzing climatological data in various types of applied problems. One two-hour lab per week.

ES 347. GLOBAL CLIMATES. (3) The global pattern of climates and climate producing factors. Climatic effects in relation to man and man's effect upon climate.

ES 350. MINERALS AND ROCKS. (4) Formation processes, composition and identification of rocks and minerals in the earth's crust with important abundance or special use. Three lecture and one lab two hours per week.

ES 353. SEDIMENTARY PROCESSES. (3) Prerequisite: ES 102 or consent of instructor. Origin, dispersion, deposition, diagenesis, classification and general distribution of sedimentary materials; principles of physical stratigraphy and biostratigraphy. Three hours per week with occasional field work integrated into course.

ES 354. GEOLOGIC HISTORY OF THE APPALACHIANS. (4) Prerequisites: ES 102 and 350, or consent of instructor. An examination of the history of the Appalachian system (including Coastal Plain) emphasizing methods of interpreting the geologic record. Topics include classification and measurement of geologic time; spatial and temporal relations of rocks; geologic structures and fossils in the Appalachians; and evolution of the Appalachians in terms of plate tectonics.

ES 355. GEOLOGICAL MAPPING AND INTERPRETATION. (4) A field-oriented study of the principles of structural geology and lithology. Prerequisite: ES 102 and ES 350. Two lecture hours and four laboratory hours per week.

ES 361. LANDSCAPE EVOLUTION. (4) Prerequisite: ES 102. Treatment of the processes shaping the earth's surface, genesis of landforms, and the theories related to landform development. Three lecture hours and one laboratory period of two hours a week.

ES 365. PHYSICAL AND GEOLOGICAL OCEANOGRAPHY. (3) A study of the ocean environment emphasizing the ocean's place in planet Earth's energy exchange systems. Emphasis also on the ocean as a complex solution, topography of the ocean floor, sedimentation and coastline morphology.

ES 367. HYDROLOGIC PROCESSES. (3) Prerequisite: ES 101 or 102, or equivalent. An introduction to the atmospheric, soils and geologic aspects of surface and ground water processes. Three hours per week with occasional field work integrated into course.

ES 370. INTRODUCTION TO ENVIRONMENTAL PROBLEMS. (3) Prerequisite: consent of the instructor. The study of major problems in the human environment.

ES 371. ENVIRONMENTAL QUALITY MANAGEMENT. (3) A study of concepts and techniques used in the design and implementation of air and water resource management plans.

ES 372. ENVIRONMENTAL IMPACT ANALYSIS. (3) Prerequisites: 15 hours of earth sciences, including ES 340. A survey of environmental impact requirements and associated procedures, guidelines and methods of assessing physical environmental impacts. Three hours per week of combined lecture and supervised field work.

ES 380. ENVIRONMENTAL EARTH SCIENCES. (3) Integration of cultural and physical aspects of environmental degradation. Introduction to environmental aspects of earth materials, natural earth hazards, conservation and recycling of resources and environmental planning.

ES 385. ENVIRONMENTAL GEOCHEMISTRY. (4) Prerequisites: ES 102 and Chem 101, Chem 102, or consent of instructor. Geochemical factors relating to man and the environment including chemistry of the biosphere, lithosphere, hydrosphere and atmosphere, geochemical cycles and the chemical effect of man on his ecosystem. Three lecture hours and one two-hour lab per week.

ES 404. CONCEPT DEVELOPMENT IN EARTH SCIENCE. (3) Prerequisite: consent of the instructor. Examination of major concepts in earth science with emphasis on implementing their instruction at the primary and secondary school levels. One lecture hour and two laboratory periods of two hours each a week.

ES 405. SELECTED TOPICS IN EARTH SCIENCES. (3) Prerequisite: consent of instructor. An in-depth treatment of specific topics selected from one of the fields of the earth sciences. To provide increased specialization in various fields beyond the 300-level course. Topics will vary from semester to semester. May be repeated for credit.

ES 460. INDIVIDUAL STUDY IN EARTH SCIENCES. (1-4) Permission of the department must be obtained and credit hours established in advance. Tutorial study or special research problems. May be repeated for credit.

DEPARTMENT OF POLITICAL SCIENCE

Chairman: Professor Lyons
Professor: Jamgotch
Associate Professors: Cox, Fleitas, McCoy
Assistant Professors: Arrington, Backman, Brenner, Bryant*, Dorin, Kyle, Mundt, Stowe
Instructor: Heilig
Lecturer: Joyner
Lecturer (part-time): Farquhar

A major in Political Science for the B.A. degree requires: (1) 30 semester hours of political science to include PSC 490 (Scope of Political Science) and one of the following three courses: PSC 390 (Political Measurement), PSC 391 (Research Methods) and/or PSC 392 (Survey Research); and (2) 18 semester hours of course work in no more than two of the following disciplines: anthropology, black studies, computer science, economics, geography, history, mathematics, philosophy, psychology and sociology. All 18 hours may be taken in a single discipline—for example, sociology or history; or, any other combination may be used, such as 12 hours in sociology and six hours in psychology. With an adviser's approval, a student may elect to do 18 hours of related work on an interdisciplinary topic.

Students may opt to receive the Bachelor of Arts in political science with a concentration in international studies. A concentration in international studies shall include at least 18 hours (of a total of 30) in courses listed in the *Catalog* under international relations, comparative politics and area studies. Majors are encouraged to diversify their course work in international studies by taking 24 hours in at least three of the following fields: anthropology, comparative literature, comparative sociology, comparative religions, geography, international business, economics and trade, modern foreign language and 19th and 20th century history. (The fulfillment of this requirement satisfies the department's general related work requirement.)

The offerings including introductory courses are divided into six major areas as follows:

1. American Politics: Political Science 110, 301, 303, 305, 307, 309, 311, 312, 313, 314, 315, 316, 317, 318, 319, 321, 322.

2. Comparative Politics: Political Science 130, 331, 332, 335, 336, 341, 343, 345, 346, 347, 348, 349.

3. International Relations: Political Science 150, 353, 357, 359, 360, 361, 365, 469.

4. Political Theory: Political Science 371, 373, 374, 375.

5. Public Administration: Political Science 383, 384, 387.

6. Scope and Methods of Political Science: Political Science 390, 391, 392, 490.

* On leave of absence 1975-76

POLITICAL SCIENCE

PSC 110. INTRODUCTION TO AMERICAN POLITICS. (3) Role of the President, Congress, Supreme Court and national administrative agencies in the American political system. Relationship between the American people and their political institutions with emphasis upon political culture, the electoral process, interest groups, political communication and the international commitments of the United States.

PSC 130. INTRODUCTION TO COMPARATIVE POLITICS. (3) Political comparisons among nations. Diverse geographical emphases, including some of the following: Latin America, the Atlantic communities of the West, Central and Eastern Europe, the Middle East, Africa, Central Asia, East Asia and Southeast Asia.

PSC 150. INTRODUCTION TO INTERNATIONAL POLITICS. (3) Analysis of politics among nations: material and psychological sources of national power, the role of law, force, and diplomacy in world politics, problems of peace and disarmament, and international organization.

PSC 150L. INTRODUCTION TO INTERNATIONAL POLITICS LABORATORY. (1) (Simulation Section). The laboratory experience will address itself to the simulation of a complex phenomenon known as "international behavior." One laboratory period of two hours per week.

PSC 300. SELECTED TOPICS IN POLITICAL SCIENCE (1-4) An intensive study of a political topic. The particular topic investigated may vary from semester to semester, and a student may take more than one course under this number.

AMERICAN POLITICS

PSC 301. POLITICAL SOCIALIZATION. (3) The study of the processes by which the political culture of the society is transmitted, formally and informally, to individual members. The course examines the learning process, the agents of socialization, the content of the learning and the consequences of political socialization for the functioning of the political system.

PSC 303. PUBLIC OPINION AND THE MASS MEDIA. (3) The nature and influence of public opinion and the effects of the news media on public opinion and political behavior. The course emphasizes research on the development and content of public opinion and social psychological studies on the process of opinion change.

PSC 305. ELECTORAL BEHAVIOR. (3) An examination of the psychological, sociological and political variables that influence voting behavior and that affect electoral stability and change. The course emphasizes studies derived from survey research.

PSC 307. ETHNIC POLITICS. (3) The role of racial, religious and nationality groups in American politics.

PSC 309. POLITICAL PARTIES AND INTEREST GROUPS. (3) Analysis of the role played by political parties and interest groups in the American political system.

PSC 311. THE CONGRESS. (3) Analysis of the role of the Congress in the American political system and its relationships with the other branches of government. The course includes study of the recruitment and socialization of congressmen, the committee system and roll call analysis.

PSC 312. THE PRESIDENCY. (3) Analysis of the role of the Presidency in the American political system and its relationships with the other branches of government. The course includes study of the strategies of presidential nomination and election, the sources and indicators of presidential power, how those who have held the office have shaped it and been shaped by it.

PSC 313. JUDICIAL BEHAVIOR. (3) Recommended prerequisites: PSC 390 or 391 or equivalent. Survey of the empirical studies concerning the determinants of the behavior of judges.

PSC 314. AMERICAN CONSTITUTIONAL LAW. (3) Examines the development of American constitutionalism, with a major emphasis on the roles played by the Supreme Court in the emergence of the American political system. Studies the justices as intellectual personalities engaged in the formulation of national policies. Utilizes Supreme Court decisions and opinions, histories, biographies and political science analyses to study the evolution of governmental powers and individual rights from colonial America through the end of the Roosevelt Court or Stone Court in 1946.

PSC 315. CIVIL RIGHTS AND LIBERTIES. (3) An analysis of Supreme Court decisions relating to civil rights and liberties.

PSC 316. JUDICIAL PROCESS. (3) Analysis of the structure and functions of federal and state courts in the context of the American political system. Emphasis upon the roles of judges, juries, counsel, litigants, police, interest groups and other actors in the adjudication processes.

PSC 317. POLITICS OF CRIMINAL LAW. (3) This course studies the politics of the Supreme Court interactions with the Congress, Presidency, Justice Department and the states in the formulation of policies related to the criminal law.

PSC 318. LAW AND SOCIAL CHANGE. (3) Examines the formulation of desegregation and poverty policies at the national, state and local levels. It studies the interaction of law and social change in these areas of public policy with an emphasis upon the political processes of courts and other legal subsystems.

PSC 319. STATE POLITICS. (3) Comparative analysis of the 50 states, utilizing socioeconomic characteristics, structural traits and policy outputs as the primary variables of interest.

PSC 321. URBAN POLITICS. (3) Analysis of the political process in the nation's metropolitan areas and the adjustments and responses of the U.S. governmental system in attempting to cope with the urban crisis.

PSC 322. CONTEMPORARY URBAN PROBLEMS. (3) A study of selected urban problems, including an analysis of the causes and consequences of governmental policies designed to cope with these problems. Topics of interest would include: crime and law enforcement, poverty and welfare, urban transportation, education, pollution, housing and redevelopment, and urban revenue and expenditure patterns.

COMPARATIVE POLITICS AND AREA STUDIES

PSC 331. THE NATURE OF POLITICAL CHANGE. (3) Comparative study of political change with reference to problems of reform, revolution and nation-building.

PSC 332. THE POLITICS OF MODERNIZATION IN WESTERN SOCIETIES. (3) An examination of cultural crises, the emergence of a counter-culture and the development of new forms of political opposition within western industrial societies. Exploration of possible societal form of the future, including the post-welfare state and the western technocracy.

PSC 335. POLITICAL VIOLENCE. (3) This course is designed to address four questions: (1) What is political violence? (2) Why does it occur? (3) What is its relationship to other political processes? (4) What is its impact on society? The emphasis of this course, while drawing on examples from contemporary American and foreign scenes, is on examining manifestations of violent political behavior such as pathological violence, conspiratorial violence, collective violence and governmental violence.

PSC 336. COMPARATIVE URBAN POLITICS. (3) Urban growth, urban problems, and political response in cross-national perspective. Focus on the urban policy process including political explanations for variations in national urban growth and urban structure. Attention to selected case and comparative studies on the U.S., Europe, Latin America, Africa and Asia.

PSC 341. GOVERNMENT AND POLITICS OF WESTERN EUROPE. (3) Comparative analysis of selected West European governments including Great Britain, France, Germany and Italy.

PSC 343. AFRICAN POLITICS. (3) A comparative perspective on the politics of independence in sub-Saharan Africa and on the performance of the new political systems there in terms of national and international integration and the modernization of traditional societies and economies.

PSC 345. GOVERNMENT AND POLITICS OF THE SOVIET UNION. (3) The origins of Bolshevism and the substance and role of Marxist-Leninist ideology. The structure and functions of the Communist Party of the Soviet Union (CPSU). The principles of Soviet politics and the instruments of rule. The Soviet political system in transition and its relationship to world communism.

PSC 346. COMMUNIST POLITICS IN COMPARISON. (3) Studies the most dynamic features of communist public order systems including the Soviet Union, Poland, Czechoslovakia, Hungary, Yugoslavia, Cuba and the People's Republic of China. Compares ideologies, party leaderships, youth movements, interest groups, political dissent and the politics of human mobilization and national development.

PSC 347. GOVERNMENT AND POLITICS OF LATIN AMERICA. (3) Comparative study of the political development of Latin American political systems with reference to selected aspects and problems of contemporary politics in the region.

PSC 348. POLITICS IN THE PEOPLE'S REPUBLIC OF CHINA. (3) Revolution, ideology and organization in communist China. The origins, development and maintenance of the Chinese political system. Cross-national comparison with other communist and mobilization systems.

PSC 349. GOVERNMENT AND POLITICS OF ASIA—DEMOCRATIC SYSTEMS. (3) Political behavior and the growth of democratic political institutions in selected Asian states, particularly Japan. Emphasis on the nature of political change and political process—political participation and recruitment, political socialization, party systems and voting behavior, policy formation. Cross-national comparison with non-Asian democratic systems.

INTERNATIONAL RELATIONS

PSC 353. POLITICAL FOUNDATIONS OF INTERNATIONAL ORDER. (3) The structure, processes and problems of general and regional international organizations, and the origins and contemporary role of international law.

PSC 357. AMERICAN FOREIGN POLICY. (3) Systematic study of contemporary American foreign policy-making.

PSC 357L. AMERICAN FOREIGN POLICY LABORATORY. (1) The laboratory experience will allow students to simulate the decision-making process of the United States government in the solution of key foreign policy issues. One laboratory period of two hours per week.

PSC 359. SOVIET FOREIGN POLICY. (3) The concepts, content and evolution of Soviet foreign relations, with emphasis upon change and continuity in Russian and Soviet policies. Contemporary problems of Soviet diplomacy with other world powers and with the MarxistLeninist nations of the Communist international system.

PSC 360. COMPARATIVE FOREIGN POLICIES. (3) Comparative analysis of the foreign policies of both large and small nation-states. This course, with the use of comparative approaches, focuses on the major variables within and outside contemporary states that influence the nature of their foreign policies. Of particular importance will be the examination of both variables on foreign policy under specifiable conditions and the policy-making apparatus of each state.

PSC 361. PROBLEMS OF DEFENSE AND NATIONAL SECURITY POLICY. (3) Investigates major concepts of war and the problems of arms control, escalation and the proliferation of nuclear weapons. Examines trends and conditions of international conflict, technological change and domestic political environments as they relate to defense and national security.

PSC 365. EAST ASIA IN WORLD AFFAIRS. (3) An examination of the basic factors governing East Asia's role in world affairs, both traditionally and in the present day.

PSC 469. SCOPE AND THEORY IN INTERNATIONAL POLITICS. (3) Prerequisites: PSC 130 or 150. Survey of major theories in the field, with emphasis on contemporary, empirically based approaches to theory building.

POLITICAL THEORY

PSC 371. HISTORY OF CLASSICAL POLITICAL THOUGHT. (3) Major concepts and systems of political thought from Plato to the seventeenth century.

PSC 373. HISTORY OF MODERN POLITICAL THOUGHT. (3) Major concepts and systems of political thought from the seventeenth century to the present.

PSC 374. CONTEMPORARY SYSTEMATIC POLITICAL THEORY. (3) A review of the major contemporary theorists who present a comprehensive and systematic analysis, evaluation or prescription of politics. Both normative and empirical approaches will be used in studying twentieth century democratic theory, systems analysis, group theory power concepts and neo-Marxian and conservative ideologies.

PSC 375. LEGAL THOUGHT. (3) A study of the contributions of natural law, legal positivism and legal realism to an understanding of what is the nature of law.

PUBLIC ADMINISTRATION

PSC 383. ADMINISTRATIVE BEHAVIOR. (3) The role of the administrator and public bureaucracy in modern democratic society. Particular attention will be given to the interplay of forces created by executives, legislators, political parties and interest groups.

PSC 384. DECISION MAKING IN PUBLIC ADMINISTRATION. (3) An examination of the major schools of decision making theory: rationalism, incrementalism and mixed-scanning. The use of these approaches in public administration in areas of budgeting, organization and program design, and personnel will be studied, using problem sets and simulation techniques.

PSC 387. URBAN ADMINISTRATION. (3) A study of administration in the context of the urban setting. Attention will be given to urban governmental bureaucracies, their response to and interaction with their environments, and their roles in developing urban policy.

SCOPE AND METHODS OF POLITICAL SCIENCE

PSC 390. POLITICAL MEASUREMENT. (3) An introduction to the use of quantitative techniques in the analysis of political data. The course emphasizes the understanding of measurement concepts and introduces the student to practical applications in working with quantitative data.

PSC 390L. POLITICAL MEASUREMENT LABORATORY. (1) One two-hour laboratory period per week. The laboratory is required for successful completion of PSC 390 and is to be taken concurrently with PSC 390. The laboratory is open only to students who are enrolled in PSC 390.

PSC 391. RESEARCH METHODS IN POLITICAL SCIENCE. (3) An introduction to research methods in political science to include a brief consideration of the following topics: philosophy of science literature; the place of research methods in the discipline of political sciences; research design; research strategies and techniques; data interpretation.

PSC 391L. RESEARCH METHODS LABORATORY. (1) One two-hour laboratory period per week. The laboratory is required for successful completion of PSC 391 and is to be taken concurrently with PSC 391. The laboratory is open only to students who are enrolled in PSC 391.

PSC 392. INTRODUCTION TO SURVEY RESEARCH. (3) An examination of the purposes, logic and procedures of survey research in the study of political attitudes and behavior. The major steps in survey research—planning, sampling, questionnaire design, data collection, processing data and analysis—will be reviewed. The student will have an opportunity to apply newly acquired skills in a field situation.

PSC 400. INDEPENDENT STUDY. (1-3) Prerequisite: consent of the instructor. Supervised investigation of a political problem that is (1) of special interest to the student; (2) within the area of the instructor's special competence; and (3) normally an extension of previous course work with the instructor. A student may take more than one course under this number.

PSC 490. THE SCOPE OF POLITICAL SCIENCE. (3) Prerequisite: PSC 390, 391 or 392. The student completes an article length research paper or other project under the direct supervision of a member of the faculty. The paper or project must involve quantitative or other methods of modern political analysis. In seminar fashion the students and a faculty member will meet to discuss and criticize the senior projects.

Chairman: Professor Greenspoon
Professors: Diamant*, Grimsley
Associate Professors: Lamal, Simono, Sohn
Assistant Professors: Bauer, Calhoun, Cann, Fernald*, Goolkasian, Haskett, Long, Maitland, Selby, Toner, Wachowiak, Windholz
Instructors: Osborne, Weatherington
Lecturer: McCarver
Lecturer: (part-time) Starnes

A major in psychology leading to the B.A. degree consists of 29 semester hours of psychology including General Psychology (101 and 101L), Research Methodology (241), History and Systems of Psychology (461) and a senior seminar (491, 492, 493, 494, or 495).

Other course requirements for majors are MAT 122 (Elements of Statistics), two courses from the subject area of biology, chemistry and physics and six hours of social science exclusive of psychology.

The additional courses necessary to fulfill the 29 hour requirement of the major should be selected to aid the student in the attainment of higher goals. However, the student cannot include more than three hours credit in Psychology 489 and three hours credit in psychology 490 in the 29 hour requirement of the major. Students considering graduate school are strongly urged to take courses in basic psychological processes, eg., learning, sensation and perception, physiological psychology.

Related work consists of 18 semester hours which are to be arranged by the student and his adviser. Related work should be considered in terms of the fulfillment of the individual's vocational and educational goals. Students in the elementary education program may use the education sequence as related work.

RECOMMENDED CURRICULUM FOR THE B.A. DEGREE IN PSYCHOLOGY

FRESHMAN YEAR

Psychology 101	3	Psychology (202, 203 210, 220 or 230)	3
Psychology 101L	1	Humanities	3
Math 101 or 103**	3	Math 122 for SBS	3
Natural Science (with lab; either biology, chemistry or physics)	4	Natural Science (either biology, chemistry or physics)	3-4
English	3	English	3
	14		15-16

* On leave of absence 1975-76

** Students who seek certification in early childhood and elementary education should take Math 130 and 131 instead of 101. They will then take Math 122, and PSY 240 will be taken one semester later.

SOPHOMORE YEAR

Psychology 241 4	Psychology (200 or 300 level) 6
Social Science 3	Related Work 3
Related Work 3	Social Science 3
Elective 3	Elective 3
Humanities 3	
16	15

JUNIOR YEAR

Psychology (300 level and above) 3-6	Psychology (300 level and above) 3-6
Related Work 6	Related Work 6
Electives 3-6	Electives 3-6
15	15

SENIOR YEAR

Seminar in Psychology 3	Seminar in Psychology 3
or	or
Psychology 461 3	Psychology 461 3
Electives 12	Electives 11
15	14

COURSE DESCRIPTIONS

PSYCHOLOGY

PSY 101. GENERAL PSYCHOLOGY. (3) A survey of the field including such topics as learning, emotions, motivation, personality, psychological testing and abnormal behavior. Emphasis on psychology as a behavioral science. May be taken with or without the lab. All psychology majors and those who wish to apply this course as partial fulfillment of the University science requirement must take PSY 101L during the same semester in which they take PSY 101.

PSY 101L. GENERAL PSYCHOLOGY LABORATORY. (1) Two one-hour laboratory periods per week. An introduction to laboratory equipment and procedures. (May not be taken apart from the lecture portion of PSY 101 except by psychology majors who have permission of the department.)

PSY 202. EDUCATIONAL PSYCHOLOGY. (3) Prerequisite: PSY 101. The psychology of learning; problems related to concept formation and application of behavior modification techniques to the classroom.

PSY 203. PSYCHOLOGY OF ADJUSTMENT. (3) Prerequisite: PSY 101. The study of the process of adjustment. Primary consideration given to motivation, frustration and conflict, adjustment mechanisms and psychotherapy.

PSY 210. DEVELOPMENTAL PSYCHOLOGY. (3) Prerequisite: PSY 101. A detailed discussion of the principles of psychological change from infancy to old age, with a consideration of genetic, physiological and environmental determinants.

PSY 220. CHILD PSYCHOLOGY. (3) Prerequisite: PSY 101. Psychological development in infancy and childhood, including the development of learning, thought, language, social relations, intelligence and morality. Remedial measures suggested in dealing with early child tendencies which might otherwise lead to severe academic and social difficulties.

PSY 230. ADOLESCENT PSYCHOLOGY. (3) Prerequisite: PSY 101. Developmental and psychological characteristics of adolescence. Research methods and familiarity in case study emphasized. School and personality problems studied.

PSY 241. RESEARCH METHODOLOGY. (4) Prerequisites: PSY 101, PSY 101L and MAT 122. An introduction to methods of psychological research including experimental, observational and correlational. Basic concepts of philosophy of science will also be discussed. Emphasis on methodology rather than content but the applicability of methods to current topics in psychology is covered. Three lecture hours and one two-hour laboratory period a week.

PSY 303. SOCIAL PSYCHOLOGY. (3) Prerequisite: PSY 101. The social behavior of man. Man's behavior in relation to other individuals, groups and products of culture, both material and nonmaterial. Group dynamics, leadership, the nature of prejudice, the effects of mass communication, public opinion are some of the topics treated.

PSY 305. PSYCHOLOGY OF PERSONALITY. (3) Prerequisite: PSY 101. Current personality theories. Consideration given to psychoanalytic, physiological, trait and factor, the perceptual viewpoints in the light of contemporary research.

PSY 307. ABNORMAL PSYCHOLOGY. (3) Prerequisite: PSY 101. A history of psychopathology. Case studies, differential diagnosis, psychological dynamics of abnormal behavior, including theoretical, clinical and experimental contributions in the field.

PSY 310. COMPARATIVE PSYCHOLOGY. (3) Prerequisite: PSY 101. An introduction to the study of animal and human behavior from a comparative point of view. Emphasis on the classification of behavior patterns as well as the origin and development of these patterns.

PSY 311. PSYCHOLOGY OF LEARNING. (3) Prerequisite: PSY 101. (Completion of PSY 241 is strongly recommended.) A survey of the major theories and empirical findings in the area of learning.

PSY 312. MOTIVATION. (3) Prerequisite: PSY 101. (Completion of PSY 241 is strongly recommended.) A study of the current theories and research in the area of human and animal motivation.

PSY 313. SENSATION AND PERCEPTION. (3) Prerequisite: PSY 101. (Completion of PSY 241 is strongly recommended). A survey of sensory and perceptual processes, including such topics as psycho-physics, information processing and color perception.

PSY 371. INDUSTRIAL PSYCHOLOGY. (3) Prerequisite: PSY 101. Psychological theories as applied to industry and business. Studies in human engineering and personnel problems.

PSY 401. TOPICS IN PSYCHOLOGY. (3) Prerequisite: consent of the instructor. Examination of special psychological topics. May be repeated for credit.

PSY 420. BEHAVIOR MODIFICATION. (3) Prerequisite: consent of the instructor. Preference is given to junior and senior psychology majors. A consideration of the application of behavioral principles to human behavior. Topics considered include positive control, aversive control, modeling and vicarious processes, desensitization and aversive counterconditioning. Three hours involvement per week in an off-campus facility is required. A paper dealing with a topic selected by the student is required.

PSY 430. HUMAN COGNITIVE PROCESSES. (3) Prerequisite: PSY 101. (Completion of PSY 241 is strongly recommended.) A study of the processes involved in such complex human behaviors as language (acquisition and usage), memory and problem solving. Emphasis will be upon experimental findings and current theories.

PSY 451. PHYSIOLOGICAL PSYCHOLOGY. (3) Prerequisite: PSY 101. The relationship of physiological systems to integrated behavior. Emphasis on neural aspects of behavior and current studies in reaction to drug and other stimuli.

PSY 461. HISTORY AND SYSTEMS OF PSYCHOLOGY. (3) Prerequisite: PSY 101. Influential psychological systems and their historical antecedents. Emphasis on Gestalt, Psychoanalytic and behavior theory. Evaluation of current existential influence.

PSY 480. RESEARCH METHODS IN PHYSIOLOGICAL PSYCHOLOGY. (4) Prerequisites: PSY 101 and permission of the instructor. An introduction to current laboratory techniques in physiological psychology, including basic surgeries, lesioning, stimulation and histology. Three lecture hours and one two-hour laboratory period a week.

PSY 481. PSYCHOLOGICAL COUNSELING AND PSYCHOTHERAPY. (3) Prerequisite: PSY 101 and PSY 307. An introduction to the major theories of psychological counseling and psychotherapy with special emphasis on individual techniques including diagnosis.

PSY 489. PRACTICUM IN APPLIED PSYCHOLOGY. (1-4) Prerequisite: permission of the instructor. A course allowing junior and senior students the opportunity to work in practical settings related to

psychology under the supervision of a faculty member. (May be repeated for credit with departmental permission. The student must have obtained approval in the semester preceding the semester in which the practicum is to be taken.)

PSY 490. INDIVIDUAL RESEARCH. (1-4) Prerequisite: permission of the instructor. Limited to psychology majors. Non-majors require special approval. A course allowing the senior psychology major an opportunity to initiate, design and conduct an original research problem in his area of interest. A research prospectus must be approved in the semester preceding the semester in which the research project is to be conducted. May be repeated for credit.

PSY 491. SEMINAR IN HUMAN ADAPTATION AND BEHAVIOR. (3) Prerequisite: senior standing and permission of the instructor. Intensive reading and discussion in selected areas of psychology, such as stress, personality, emotions and psychopathology.

PSY 492. SEMINAR IN SOCIAL PSYCHOLOGY. (3) Prerequisite: permission of the instructor. An intensive study at the advanced level of topics of current research and theoretical interest in social psychology.

PSY 493. SEMINAR IN PHYSIOLOGICAL PSYCHOLOGY. (3) Prerequisite: PSY 101 and permission of the instructor. An intensive study of selected topics in physiological psychology, such as psychopharmocology and neuro-physiological basis of learning and memory.

PSY 494. SEMINAR IN EXPERIMENTAL PSYCHOLOGY. (3) Admission by consent of the instructor. An in-depth examination of an area of current concern in psychological laboratory. Each semester will have a different focus, and such topics as discrimination learning, memory, experimental analysis of behavior, and attention will alternate.

PSY 495. SEMINAR IN DEVELOPMENTAL PSYCHOLOGY. (3) Prerequisite: PSY 101 and permission of the instructor. This seminar will be a concentrated examination of current issues and research in a field of developmental psychology. Such topics as the concept of development in historical and current usage, learning (especially in human infants), development of social relations, intelligence, cognitive abilities and the acquisition of language will be treated in detail.

PSY 501. PSYCHOLOGY OF EXCEPTIONAL CHILDREN. (3) Assessing the exceptional child. Emphasis on current research in several diagnostic categories.

PSY 502. ADJUSTMENT PROBLEMS OF THE DISADVANTAGED. (3) A seminar concerned with such issues as racial attitudes, prejudice, and poverty. Assigned reading and discussion deal with the application of psychological principles to these problems. Contributing lecturers with professional experience with problems of the disadvantaged will participate.

PSY 503. PSYCHOLOGY OF MENTAL RETARDATION. (3) An intensive study of the psychological and sociological aspects of mental retardation in relation to adjustment and educational development. Emphasis on current research and diagnostic categories.

PSY 504. TESTS AND MEASUREMENTS. (3) Prerequisite: PSY 101. A survey of psychological and educational measurements in current use. Emphasis will be placed on structure, administration and application of group tests. Individual tests such as Stanford-Binet, WISC and WAIS will be reviewed.

PSY 505. ADVANCED PERSONALITY THEORY. (3) A critical evaluation of the major personality theories including an extensive survey of current research.

PSY 514. METHODS OF STUDENT EVALUATION. (3) Prerequisite: permission of the instructor. A practical course of construction of teacher-made evaluation procedures. Special emphasis will be placed on writing and item analysis of essay and restricted-response achievement tests.

PSY 520. PSYCHOLOGY OF THINKING. (3) The study of theories of learning, thinking, and cognition, especially as they apply to the educational process.

DEPARTMENT OF SOCIOLOGY AND ANTHROPOLOGY

Chairman: Professor Goodnight
Associate Professors: Heitman, Rent
Assistant Professors: Bertoli, Bonney, Cook, Dubisch, Ferraro, Fischer, Forrest, Hayes, Lance, Michalowski, Roberts, Wilson
Instructor: Scout
Lecturers (part-time): Barlow, Frye, Wolf

The Department of Sociology and Anthropology includes the disciplines of sociology and anthropology and the field of social work. Although an academic major presently is available only in sociology, a variety of anthropology and social work courses is offered, and plans are under way to expand offerings and develop programs in each of these areas.

THE DISCIPLINES

Sociology

Sociology is the scientific study of man's social life. It focuses upon the forces which organize and structure societies and smaller groups as well as the forces which disorganize and threaten to dissolve them. As a science, sociology applies an objective and systematic method of investigation to identify the patterns and forms of social life and to understand the processes by which they are established and changed.

The study of sociology is particularly attractive to persons preparing for further study and professional careers as well as persons who are seeking a liberal education and immediate employment. As a liberal arts program, it enables the student to understand the social context in which he finds himself and the social forces which shape his personality, his actions and his interactions with others. As a preprofessional program it provides a good background for persons entering social work, law, teaching, the ministry, journalism, planning, public relations and personnel services. It also provides analytical skills related to market research and program evaluation in human services, sales, management and other business activities.

Anthropology

Anthropology is the study of man and his culture and is organized into four sub-fields: cultural anthropology, archeology, physical anthropology and linguistics. It focuses upon his cultural heritage and history and upon the biological aspects of man which relate to his cultural development. It emphasizes the comparative study of man and the cross-cultural analysis of his institutionalized responses to fundamental human needs.

The study of anthropology is relevant for persons whose occupations and endeavors require an understanding of a variety of cultures. It is particularly useful for teachers of students from diverse cultural backgrounds, social workers and persons seeking careers in journalism and communications as well as persons who plan to work in or with

foreign countries. It provides competencies needed for employment in such organizations as museums, highway departments (as archeologists), police departments (as physical anthropologists), the park service and the Bureau of Indian Affairs.

Social Work

Social work includes the study and enhancement of human social functioning. It focuses upon the prevention, treatment and control of problems in the social life of individuals, groups and communities. It blends knowledge from the social and behavioral sciences with social work theory and skills in the professional application of the helping relationship.

The study of social work prepares persons for further study and careers in social welfare, including direct social service, family counseling and crisis intervention. It provides an excellent background for careers involving the planning, administration and evaluation of social services. It also provides knowledge and skills utilized by vocational rehabilitation counselors, probation and parole officers, medical and psychiatric social workers and other members of community and industrial social service organizations.

THE PROGRAMS

Sociology Major

The undergraduate program in sociology is designed to respond to the needs of individuals and society:

1. To understand themselves, each other, and the interrelationships between individual and society;

2. To comprehend the past and present influence of social factors and their implications for the future;

3. To acquire the perspective and skills necessary for acquiring and applying sociological knowledge; and

4. To predict and control the influence of social factors for the prevention and amelioration of social problems.

The sociology curriculum is designed to familiarize the student with the questions sociologists ask about social reality, the conceptual and methodological tools they utilize to gain answers to these questions and the resultant body of knowledge. It is relatively structured in terms of the number of courses the student is required to take, but it is highly flexible in terms of the freedom to focus upon and become involved in inquiry pertaining to sociological problems of the student's own choosing within each of these courses. Students should consult with the Department of Sociology and Anthropology about internship opportunities in sociology.

Requirements. A major in sociology leading to the B.A. degree consists of (1) a minimum of 29 semester hours of sociology beyond the 100 level including the core curriculum of SOC 151, 253, 254, 354, 355 and 456; and (2) a minimum of 18 semester hours of related work.

Related work is arranged by the student in consultation with an adviser and may consist of a concentration of courses: (1) within a single discipline; (2) selected from two complementary disciplines; or (3) focused upon a specific topic. Students in the teacher certification program may use the courses in the professional education sequence as their related work.

SUGGESTED CURRICULUM FOR THE B.A. DEGREE IN SOCIOLOGY

FRESHMAN YEAR

Sociology 151 3	Sociology Electives 6
English 3	English 3
Math or Foreign Language ... 3-4	Math, Logic or Foreign Language 3-4
Natural Science 4	Natural Science 4
Humanities 3	
16-17	16-17

SOPHOMORE YEAR

Sociology 253 3	Sociology 254 4
Social Science 3	Social Science 3
Humanities 3	Related Work 3
Related Work 3	Foreign Language or Electives 4-6
Foreign Language or Electives 4-3	
16-15	14-16

JUNIOR YEAR

Sociology 355 4	Sociology 354 3
Sociology Elective 3	Sociology Elective 3
Related Work 3	Related Work 3
Elective 3	Electives 6
13	15

SENIOR YEAR

Sociology 456 3	Related Work 3
Related Work 3	Sociology Internship 3-6
Electives 9	Electives 9-6
15	15

Concentration in Anthropology

Students interested in a concentration in anthropology may select a program of courses in consultation with an anthropology faculty member to satisfy their related work requirement. It is recommended that they select courses from a number of the following areas in anthropology:

1. Regional ethnography (North American Indians, Peoples of the Mediterranean, African Ethnography, etc.)

2. Institutional courses (Kinship and Marriage, Primitive Art, Economic Anthropology, etc.)

3. Archeology

4. Physical anthropology

5. Linguistics

6. Electives (Urban Anthropology, Culture and Personality, Cultural Change and Applied Anthropology, etc.)

Students should consult with the Department of Sociology and Anthropology concerning internships and field schools in anthropology and archeology.

Concentration in Social Work

Students interested in preparing for careers in social work may designate "social work" as the topic around which they will build a related work program. Such a program should be carefully planned to build on and be integrated with knowledge from the humanities, social, behavioral and biological sciences. The following social work courses are recommended:

SOC 380. Field of Social Work (3)
SOC 481. Methods of Social Work (3)
SOC 490. Social Welfare Policy (3)
SOC 482. Internship in Social Work (3-6)
SOC 483. Social Work Internship Seminar (3)

Students should consult with the Department of Sociology and Anthropology concerning internship or field placement opportunities and the selection of related courses.

COURSE DESCRIPTIONS

ANTHROPOLOGY

ANT 101. GENERAL ANTHROPOLOGY. (3) A general introduction to the four subfields of anthropology, covering such topics as man's biological and cultural evolution; the structure and functions of various

institutions in primitive, peasant and modern complex societies; language and culture; and methods of cultural analysis and theories of culture. Prerequisite for all upper level courses in anthropology.

ANT 210. TOPICS IN ETHNOGRAPHY. (3) Prerequisite: General Anthropology. Examination of ethnographic regions of the world selected for study by students and faculty members. May be repeated for credit as the topics vary.

ANT 480. INTERNSHIP IN ANTHROPOLOGY. (3-6) Prerequisite: consent of the Department. Research and/or in-service training experience for selected students in cooperating community organizations. Content of each internship will be based upon a contractual agreement between the student, department and community organization. Amount of credit to be determined by the nature and extent of the internship assignment. May be repeated for credit up to a maximum of six semester hours. Offered only on a *Pass/No Credit* basis.

SOCIAL WORK

SOC 380. FIELD OF SOCIAL WORK. (3) Prerequisite: consent of the instructor. Description and analysis of the historical development and philosophy of social work and the operation of many specialized social services in contemporary society. (Does not satisfy the general degree requirements for social science.)

SOC 481. METHODS OF SOCIAL WORK. (3) Prerequisite: SOC 380. Introduction to theories and principles of methods used in working with individuals, groups and communities in correctional, medical, psychiatric and other settings utilizing recent literature and case materials. (Does not satisfy the general degree requirements for social science.)

SOC 482. INTERNSHIP IN SOCIAL WORK. (3-6) Prerequisite: SOC 481 and consent of the department; corequisite: SOC 483. Directed field experience under professional supervision in selected community agencies. Content of each internship will be based upon a contractual agreement between the student, department, and cooperating agency. Amount of credit to be determined by the number of hours of the field experience. May be repeated for credit up to a maximum of six semester hours. Offered only on a *Pass/No Credit* basis.

SOC 483. SOCIAL WORK INTERNSHIP SEMINAR. (3) Corequisite: SOC 482. Analysis and discussion of student internship experiences in relation to established concepts of social work theory and practice. May be repeated for credit.

SOCIOLOGY

SOC 151. INTRODUCTION TO SOCIOLOGY. (3) Introduction to sociology as a discipline, the sociological perspective and the process of sociological inquiry emphasizing fundamental concepts, principles and procedures.

SOC 232. SOCIOLOGY OF THE FAMILY. (3) Prerequisite: SOC 151. Description and analysis of the family as a social institution with special reference to historical and cross-cultural perspectives and the impact of social change on the family and its interrealations with other institutions.

SOC 253. EVOLUTION OF SOCIOLOGICAL INQUIRY. (3) Prerequisite: SOC 151 or the equivalent. Examination of the origins and evolution of fundamental sociological concepts, theories and research procedures and their contributions to sociological inquiry.

SOC 254. QUANTITATIVE SOCIOLOGICAL ANALYSIS (4) Prerequisite: SOC 253 or consent of the instructor. Examination of concepts and procedures pertaining to sociological inquiry with emphasis on data processing, measurement theory and quantitative models of social analysis. Three hours of lecture-discussion and two hours of laboratory each week.

SOC 271. SOCIAL PROBLEMS. (3) Prerequisite: SOC 151. Analysis of contemporary social problems and their consequences for mankind, with special emphasis upon the problems of American society.

SOC 310. AMERICAN MINORITY GROUPS. (3) Prerequisite: SOC 151. Analysis of the relations between dominant and minority groups in American society with special emphasis on the establishment, maintenance, and decline of dominance involving racial, ethnic and religious minorities.

SOC 321. HUMAN ECOLOGY. (3) Prerequisite: SOC 151. Examination of the patterns and principles of societal adjustments to the physical environment, the distribution of communities and institutions and the dynamics of ecological change.

SOC 322. POPULATION ANALYSIS. (3) Prerequisite: SOC 151. Analysis of patterns of human behavior and ideologies which influence the number, distribution and composition of population and the effect of population characteristics and changes upon society.

SOC 324. SOCIOLOGY OF THE COMMUNITY. (3) Prerequisite: SOC 151. Analysis of the concept of community, methods for delineating and describing the dimensions of community and examination of planned and unplanned community change.

SOC 325. URBAN SOCIOLOGY. (3) Prerequisite: SOC 151. Examination of the origin and development of cities, the ecological and social structure of city and region, the nature and functioning of urban institutions and the process of urban decay and renewal.

SOC 343. SOCIAL MOVEMENTS. (3) Prerequisite: SOC 151. Analysis of collective behavior with emphasis on the ideology, development and organization of movements seeking or resisting change in the social order.

SOC 354. SOCIOLOGICAL INQUIRY: THEORIES AND THEIR CONSTRUCTION. (3) Prerequisite: SOC 254 or consent of the instructor. Systematic analysis of competing and complementary theories in contemporary sociology and the acquisition and application of the basic skills of theory construction.

SOC 355. SOCIOLOGICAL INQUIRY: METHODS OF VERIFICATION. (4) Prerequisite: SOC 354. Examination and application of research principles and techniques for the verification of sociological propositions, including the formulation of the problem, the design of the research, and the collection, analysis and interpretation of the data. Three hours of lecture-discussion and a laboratory period of two hours each week.

SOC 361. SOCIALIZATION AND SOCIETY. (3) Prerequisite: SOC 151. Analysis of the process of socialization and social interaction and the sociocultural dimension of personality.

SOC 362. SOCIAL CONTROL. (3) Prerequisite: SOC 151. Analysis of the relation of social norms to conforming and deviant behavior with special attention to public opinion, propaganda and other techniques of social control.

SOC 372. SOCIOLOGY OF DEVIANT BEHAVIOR. (3) Prerequisite: SOC 151. Examination of the forms, causes, consequences and control of deviant behavior.

SOC 373. JUVENILE DELINQUENCY. (3) Prerequisite: SOC 151. Sociological analysis of the problem of youth crime with special attention to major sociological and social psychological theories of delinquency causation.

SOC 411. SOCIAL STRATIFICATION: POWER, PRIVILEGES, AND PRESTIGE. (3) Prerequisite: introductory sociology and consent of the instructor. Cross-cultural and comparative analysis of the distributive system of societies focusing upon the explanation of inequality among societies and the variations in power, privilege and prestige.

SOC 413. SOCIOLOGY OF WORK, OCCUPATIONS AND PROFESSIONS. (3) Prerequisite: introductory sociology and consent of the instructor. Analysis of occupational and professional socialization and roles; career patterns and professional ideologies; and occupational structure and change.

SOC 415. SOCIOLOGY OF COMPLEX ORGANIZATION. (3) Prerequisite: introductory sociology and consent of the instructor. Analysis of the structure and dynamics of complex organizations with special attention to rationalization through bureaucracy and the mechanisms of change.

SOC 432. SEMINAR IN CONTEMPORARY AMERICAN FAMILY SYSTEMS. (3) Prerequisites: introductory sociology and consent of instructor. Analysis of the development of modern American family

systems, their relationship to American society and their contributions to personality development with special emphasis on conceptual frameworks for family analysis.

SOC 456. SEMINAR IN ADVANCED SOCIOLOGICAL INQUIRY. (3) Prerequisite: SOC 355. Synthesis and utilization of basic sociological principles and techniques in supervised independent theorization and verification, including the presentation of projects to seminar members and departmental faculty for evaluation and criticism.

SOC 473. CRIMINOLOGY. (3) Prerequisite: introductory sociology and consent of instructor. Analysis of sociological and psychological research pertaining to crime and crime statistics including historical and contemporary theories of criminal behavior and modern trends in criminal law and corrections.

SOC 480. INTERNSHIP IN SOCIOLOGY (3-6) Prerequisite: consent of the Department. Research and/or in-service training experience for selected students in cooperating community organizations. Content of each internship will be based upon a contractual agreement between the student, department and community organization. Amount of credit to be determined by the nature and extent of the internship assignment. May be repeated for credit up to a maximum of six semester hours. Offered only on a *Pass/No Credit* basis.

SOC 485. APPLIED SOCIOLOGY. (3) Prerequisite: SOC 355 or consent of the instructor. Exploration of the role of sociologists in law and law enforcement, medicine, social work and social welfare, management, the military establishment, community development, foreign policy, the development of developing countries, urban poverty and planning and the educational system. Emphasis on the adaptation of sociological research methods and theory to temporal and other limitations imposed by the special characteristics of applied research.

SOC 490. TOPICS IN SOCIOLOGY. (1-3) Prerequisite: consent of the department. Examination of specialized sociological topics selected by students and faculty. May be repeated for credit. (A listing and brief description of specific courses offered each term is available from the departmental office.)

SOC 495. DIRECTED INDIVIDUAL STUDY. (1-4) Prerequisite: consent of the department. Supervised investigation of a sociological problem of special interest to the student. May be repeated for credit.

SOC 510. INTERGROUP RELATIONS. (3) Prerequisite: introductory sociology or consent of the instructor. Analysis of the social and social-psychological determinants of intergroup relations through an examination of labor-management relations, race relations, relations between social classes, ethnic, national, and religious groups, and other major social groupings in contemporary societies. Attention will be given to processes which introduce change in patterns of relations.

SOC 557. ADVANCED GENERAL SOCIOLOGY I: SOCIAL STRUCTURE. (3) Prerequisite: consent of the department. Systematic examination of theories and principles of social structure and organization with special emphasis on role and systems analysis and the segmentation and integration of society.

SOC 558. ADVANCED GENERAL SOCIOLOGY II: SOCIOCULTURAL CHANGE. (3) Prerequisite: consent of the department. Systematic examination of the principal theories and principles of sociocultural change with special emphasis on the evolutionary development of societal types, industrialization and urbanization of American society, and transition of developing countries.

BENEFACTIONS

PROFESSORSHIPS

The *American Credit Corporation Professorships in Business Administration* were established by the American Credit Foundation of North Carolina, Inc. The Foundation approved a statement of intent in January, 1967 to contribute $100,000 to be paid over a period of 10 years and to be used for the presentation of a salary supplement or supplements to a distinguished member or members of the faculty of the College of Business Administration, who will be known as *American Credit Corporaton Professors of Business Administration.*

The *Robert Lee Bailey Professorship in History* was UNCC's first professorship, established in December, 1965 by Mr. and Mrs. Sanford V. Davenport to honor and reward excellence in teaching by a gift in memory of her brother, Lieutenant Robert Lee Bailey of the 10th Armored Division of the U.S. Army, who was killed in Germany on March 22, 1945, near the end of the conflict in Europe. Born on April 21, 1914, in Concord, he attended Davidson College, and before the war was associated with Broyhill Furniture Company.

The *Celanese Professor of Engineering* is a distinguished professorship in the College of Engineering, which has its salary supplemented by part of the income from the rental of a building donated by the Celanese Corporation and valued at more than $1 million.

The *Charles E. Cullen Professorship* was established in 1973 by the Charlotte Sales and Marketing Executives, Inc. to honor the late "Charlie" Cullen of Charlotte. The professorship consists of an endowment in the amount of $100,000 pledged by Charlotte Sales and Marketing Executives, Inc. The income from the endowment is to provide a salary supplement or supplements for a distinguished professor of marketing in the College of Business Administration.

The *Rush S. Dickson Professorships in Finance* were established in memory of the late Rush S. Dickson of Charlotte. The professorships are made possible through the generous gifts and pledges, totaling $100,000 by the Dickson Foundation of Mount Holly and the Rush S. Dickson Family Foundation of Charlotte. Mr. Dickson established both foundations. The net income from the gifts is used for the payment of a salary supplement or supplements to a distinguished member or members of the faculty of the College of Business Administration in the field of finance.

The *Frank Porter Graham Professorship in Black Studies* was established by Miss Alice Lindsay Tate in honor of the former president of the University of North Carolina, United States senator and United Nations mediator. The income from the professrship fund will be used as a salary supplement to a distinguished member or members of the faculty of the University of North Carolina at Charlotte.

The *A. Sue Kerley Professorship in Nursing* was established in 1972 by Miss A. Sue Kerley to provide a salary supplement for a distinguished member of the College of Nursing faculty.

The *Charles H. Stone Fund* was given by Mrs. Stone in memory of her husband, a pioneer in the chemical and dyestuff industry in the South. The grant is dedicated to perpetuating the memory of Mr. Stone and assuring the high quality of chemistry instruction at the University of North Carolina at Charlotte. The net income is used for the payment of a salary supplement to a distinguished member or members of the chemistry faculty, who are designated as "Charles H. Stone Professors of Chemistry." Before World War I, Mr. Stone was employed by a German chemical company, and later he formed his own company in Charlotte and operated it until 1937 when it was purchased by American Cyanamid Company. Mr. Stone remained active with the company until his retirement in 1947. He died October 20, 1963.

NCNB AWARDS

The generosity of the North Carolina National Bank has made possible the NCNB Awards established for the purpose of recognizing and honoring members of the faculty for distinguished service. The NCNB Awards initially are used to reward excellence in teaching by members of the faculty or to honor faculty members for distinguished research and scholarly writing or devoted and sacrificial service to the University and to mankind.

THE FOUNDATION OF THE UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE

The Foundation of the University of North Carolina at Charlotte was founded in 1960 and has had from its inception the goal of undergirding the University and assisting it in the quest for excellence. To accomplish its goals, the Foundation invites private sources to contribute so that needs unmet, or inadequately provided for through state funds, may be met. The Celanese Corporation of America and the Celanese Fibers Company presented a gift in July, 1963, of a manufacturing plant at Burlington, North Carolina, valued at $1,150,000. The income derived from the rental of this plant is used to supplement the salaries of members of the faculty who teach chemistry, engineering, mathematics, physics and related subjects.

Through the 1974-75 academic year, the Directors of the UNCC Foundation have allocated $900,000 to the University for salary supplements, faculty research, scholarships and special projects.

Patrons of Excellence is a program established by the Foundation of the University of North Carolina at Charlotte, with the primary initial objective of supplementing the salaries of distinguished faculty members. Under the program *Patrons* pledge a minimum of $1,000 a year for a number of 10 years or may make a donation of at least $10,000 at one time. *Patrons of Excellence* now number 173. The Foundation continues to seek additional *Patrons.*

UNIVERSITY REGULATIONS

THE EXPECTATION OF THE UNIVERSITY

The University expects from its students a decent respect for other human beings, a regard for the law and a willingness to embrace membership in an academic community.

Some regulations are always necessary in a society of men and women. It is the intent of the University to keep the number of such regulations at a minimum and to depend rather upon the acceptance on the part of each individual of his responsibility as a member of the University.

POLICIES, PROCEDURES, AND DISCIPLINARY ACTIONS IN CASES OF DISRUPTION OF EDUCATIONAL PROCESS

The policies, procedures and disciplinary actions which will be followed in cases of disruption of the educational process are set forth in the following statement:

Section 1. Policies Relating to Disruptive Conduct

The University of North Carolina has long honored the right of free discussion and expression, peaceful picketing and demonstrations, the right to petition and peaceably to assemble. That these rights are a part of the fabric of this institution is not questioned. They must remain secure. It is equally clear, however, that, in a community of learning, willful disruption of the educational process, destruction of property, and interference with the rights of other members of the community cannot be tolerated. Accordingly, it shall be the policy of the University to deal with any such disruption, destruction or interference promptly and effectively, but also fairly and impartially without regard to race, religion, sex or political beliefs.

Section 2. Definition of Disruptive Conduct

(a) Any faculty member (the term "faculty member," wherever used in this statement, shall include regular faculty members, full-time instructors, lecturers and all other persons exempt from the North Carolina State Personnel System [Chapter 126 of the General Statutes as amended] who receive compensation for teaching, or other instructional functions, or research at the University), any graduate student engaged in the instructional program, or any student who, with the intent to obstruct or disrupt any normal operation or function of the University or any of its component institutions, engages, or incites others to engage, in individual or collective conduct which destroys or significantly damages any University property, or which impairs or threatens impairment of the physical well-being of any member of the University community, or which, because of its violent, forceful, threatening or intimidating nature or because it restrains freedom of lawful movement, otherwise prevents any member of the University community from conducting his normal activities within the University, shall be subject to prompt and appropriate disciplinary action, which may include suspension, expulsion, discharge or dismissal from the University.

The following, while not intended to be exclusive, illustrate the offenses encompassed herein, when done for the purpose of obstructing or disrupting any normal operation or function of the University or any of its component institutions: (1) occupation of any University building or part thereof with intent to deprive others of its normal use; (2) blocking the entrance or exit of any University building or corridor or room therein with intent to deprive others of lawful access to or from, or use of, said building or corridor or room; (3) setting fire to or by any other means destroying or substantially damaging any University building or property, or the property of others on University premises; (4) any possession or display of, or attempt or threat to use, for any unlawful purpose, any weapon, dangerous instrument, explosive, or inflammable material in any University building or on any University campus; (5) prevention of, or attempt to prevent by physical act, the attending, convening, continuation or orderly conduct of any University class or activity or of any lawful meeting or assembly in any University building or on any University campus; and (6) blocking normal pedestrian or vehicular traffic on or into any University campus.

(b) Any person engaged in the instructional program who fails or refuses to carry out validly assigned duties, with the intent to obstruct or disrupt any normal operation or function of the University or any of its component institutions, shall be subject to prompt and appropriate disciplinary action under this policy if (but only if) his status is such that he is not subject to the provisions of any trustee or Board of Governors policies governing suspension and discharge of faculty members.

Section 3. Responsibilities of Chancellors

(a) When any chancellor has cause to believe that any of the provisions of this policy have been violated, he shall forthwith investigate or cause to be investigated the occurrence, and upon identification of the parties involved shall promptly determine whether any charge is to be made with respect thereto.

(b) If he decides that a charge is to be made, he shall, within thirty (30) days after he has information as to the identity of the alleged perpetrator of the offense but in no event more than twelve (12) months after the occurrence of the alleged offense, (i) refer the case to the appropriate existing University judicial body, or (ii) refer the matter to a Hearing Committee drawn from a previously selected Hearings Panel which, under this option, is required to implement action for violation of Section 2 (a) or (b) of this statement. If the case is referred to an existing University judicial body under (i) above, the procedural rules of that body shall be followed, and subsections (c) through (f) below shall not be applicable. If the matter is referred to a Hearing Committee under (ii) above, the procedural rules prescribed in subsections (c) through (f) below shall be followed.

(c) The accused shall be given written notice by personal service or registered mail, return receipt requested, stating:

(1) The specific violations of this policy with which the accused is charged.

(2) The designated time and place of the hearing on the charge by the Hearing Committee, which time shall be not earlier than seven (7) nor later than ten (10) days following receipt of the notice.

(3) That the accused shall be entitled to the presumption of innocence until found guilty, the right to retain counsel, the right to present the testimony of witnesses and other evidence, the right to cross-examine all witnesses against him, the right to examine all documents and demonstrative evidence adverse to him, and the right to transcript of the proceedings of the hearing.

(d) The Hearing Committee shall determine the guilt or innocence of the accused. If the person charged is found guilty, the Hearing Committee shall recommend to the chancellor such discipline as said body determines to be appropriate. After considering such recommendation the chancellor shall prescribe such discipline as he deems proper. In any event, whether the person is found guilty or not guilty, a written report shall be made by the chancellor to the president within ten (10) days.

(e) Any person found guilty shall have ten (10) days after notice of such finding in which to appeal to the president of the University. Such an appeal if taken shall be upon the grounds set forth in Section 5.

(f) Any accused person who, without good cause, shall fail to appear at the time and place for the hearing of his case by the Hearing Committee shall be suspended indefinitely or discharged from University employment.

(g) A chancellor, unless so ordered or otherwise prevented by court, shall not be precluded from carrying out his duties under this policy by reason of any pending action in any state or federal court. Should a delay occur in prosecuting the charge against the accused because the accused or witnesses that may be necessary to a determination of the charge are involved in state or federal court actions, the time limitations set forth above in this Section 3 shall not apply.

(h) Conviction in any state or federal court shall not preclude the University or any of its officers from exercising disciplinary action in any offense referred to in this policy.

(i) Nothing contained in this policy shall preclude the president or any chancellor from taking any other steps, including injunctive relief or other legal action, which he may deem advisable to protect the best interests of the University.

Section 4. Aggravated Acts or Threatened Repetition of Acts

(a) The chancellor of each of the component institutions of the University shall appoint an Emergency Consultative Panel which shall be composed of not less than three (3) nor more than five (5) faculty members and not less than three (3) nor more than five (5) students who shall be available to advise with the chancellor in any emergency. No

member of such panel shall serve for more than one (1) year unless he be reappointed by the chancellor. The chancellor may make appointments, either temporary or for a full year, to fill any vacancies which may exist on the panel.

(b) If, in the judgment of the chancellor, there is clear and convincing evidence that a person has committed any of the acts prohibited under this policy which, because of the aggravated character or probable repetition of such act or acts, necessitates immediate action to protect the University from substantial interference with any of its orderly operations or functions or to prevent threats to or acts which endanger life or property, the chancellor, with the concurrence as hereinafter provided of the Emergency Consultative Panel established pursuant to (a) above, may forthwith suspend such person from the University and bar him from the University campus; provided, however, that in the event of such suspension, whether personally or by registered mail addressed to his last known addresses, and shall be afforded a prompt hearing, which, if requested, shall be commenced within ten (10) days of the suspension. Except for purposes of attending personally any hearings conducted under this policy, the bar against the appearance of the accused on the University campus shall remain in effect until final judgment has been rendered in his case and all appellant proceedings have been concluded, unless such restriction is earlier lifted by written notice from the chancellor.

(c) A quorum of the Emergency Consultative Panel provided for in (a) above shall consist of not less than four (4) of its members, and the required concurrence shall have been obtained if a majority of such quorum shall indicate their concurrence. The chancellor shall meet personally with members of such panel at the time he seeks concurrence, if it is feasible to do so. However, if the circumstances are such that the chancellor deems it not to be feasible to personally assemble such members, then he may communicate with them or the required number of them individually by telephone or by such other means as he may choose to employ, in which event he may proceed as provided in (b) above after the required majority of such members have communicated their concurrence to him.

(d) In the chancellor's absence or inability to act, the president may exercise the powers of the chancellor specified in this section in the same manner and to the same extent as could the chancellor but for such absence or inability to act.

Section 5. Right of Appeal

Any person found guilty of violating the provisions of this policy by the Hearing Committee referred to in Section 3 shall have the right to appeal the finding and the discipline imposed upon him to the president of the University. Any such appeal shall be in writing, shall be based solely upon the record, and shall be limited to one or more of the following grounds.

(1) That the finding is not supported by substantial evidence;

(2) That a fair hearing was not accorded the accused; or

(3) That the discipline imposed was excessive or inappropriate.

It shall be the responsibility of the president to make prompt disposition of all such appeals, and his decision shall be rendered within thirty (30) days after receipt of the complete record on appeal.

Section 6. No Amnesty

No administrative official, faculty member, or student of the University shall have authority to grant amnesty or to make any promise as to prosecution or non-prosecution in any court, state or federal, or before any student, faculty, administrative, or trustee committee to any person charged with or suspected of violating Section 2 (a) or (b).

Section 7. Publication

The provisions of this policy shall be given wide dissemination in such manner as the president or chancellors may deem advisable, and shall be printed in the official catalogs which may be issued by each component institution of the Univeristy.

FIREARMS AND OTHER WEAPONS PROHIBITED

An act to protect persons on the property of any public or private educational institution from persons carrying firearms or other weapons was enacted by the 1971 General Assembly. This act, which is in full force and effect on the UNCC campus, is as follows:

It shall be unlawful for any person to possess, or carry, whether openly or concealed, any gun, rifle, dynamite cartridge, bomb, grenade, mine, powerful explosive as defined in G.S. 14-284.1, bowie knife, black-jack, metallic knuckles or any other weapon of like kind, not used solely for instructional or school-sanctioned ceremonial purposes, in any public or private school building or bus, on any public or private school campus, grounds, recreation area, athletic field, or other property owned, used or operated by any board of education, school, college, or university board of trustees or directors for the administration of any public or private educational institution. For the purpose of this section a self-opening or switch-blade knife is defined as a knife containing a blade or blades which open automatically by the release of a spring or a similar contrivance, and the above phrase "weapon of like kind" includes razors and razor blades (except solely for personal shaving) and any sharp pointed or edged instrument except unaltered nail files and clips and tools used solely for preparation of food, instruction and maintenance. This section shall not apply to the following persons: officers and enlisted personnel of the armed forces of the United States when in discharge of their official duties as such and acting under orders requiring them to carry arms or weapons, civil officers of the United States while in the discharge of their official duties, officers and soldiers of the militia and the national guard when called into actual service, officers of the state,

or of any county, city, or town, charged with the execution of the laws of the state when acting in the discharge of their official duties, any pupils who are members of the Reserve Officer Training Corps and who are required to carry arms or weapons in the discharge of their official class duties.

Any person violating the provisions of this Act shall be guilty of a misdemeanor and upon conviction shall be punished in the discretion of the court by fine or imprisonment or by both such fine and imprisonment, not to exceed five hundred dollars ($500) fine or six months imprisonment.

ALCOHOLIC BEVERAGES

State law regulates the possession and use of alcoholic beverages. Excessive and/or inappropriate uses, as defined by state law, are punishable by criminal penalty. Also, because the University community presents a separate and special context in which an environment compatible with academic endeavors must be preserved, additional University regulation of the possession and use of alcoholic beverages on campus is necessary and proper.

It shall be the responsibility of the chancellor or his delegate to adopt and enforce regulations covering the possession and use of alcoholic beverages on the campus of the University.

DRUG ABUSE

The illicit and improper use of certain drugs (for example, cannabis, amphetamines, barbiturates, opiates and hallucinogenic drugs) is incompatible with personal welfare and the pursuit of academic excellence and will not be tolerated by the University. Furthermore, the illicit possession or transfer of these drugs is a state and/or federal offense, and the University will cooperate fully with appropriate authorities in the enforcement of the law.

The fundamental concern and responsibility of the University relative to the abuser of drugs is constructive rehabilitation. Within the limitations imposed by law, (Chapter 90, Section 111.3, and Section 113.6, Narcotic Drug Act, for example) the University will promote a program of education and encourage medical consultation in order to meet this responsibility. But it will act firmly through formal disciplinary procedures to control drug abuse in those instances where these measures prove insufficient.

Disciplinary action relative to drug abuse in the University will be administered by the University Discipline Committee.

DIRECTORY

THE UNIVERSITY OF NORTH CAROLINA

Sixteen Constituent Institutions

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ARNOLD KIMSEY KING, A.B., A.M., Ph.D., Assistant to the President
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RICHARD H. ROBINSON, JR., A.B., LL.B., Assistant to the President
ROBERT W. WILLIAMS, A.B., M.A., Ph.D., Associate Vice President - Academic Affairs

The University of North Carolina was chartered in 1789 and opened its doors to students at its Chapel Hill campus in 1795. Throughout most of its history, it has been governed by a Board of Trustees chosen by the Legislature and presided over by the Governor. During the period 1917-1972, the Board consisted of one hundred elected members and a varying number of *ex-officio* members.

By act of the General Assembly of 1931, without change of name, it was merged with The North Carolina College for Women at Greensboro and The North Carolina State College of Agriculture and Engineering at Raleigh to form a multicampus institution designated The University of North Carolina.

In 1963 the General Assembly changed the name of the campus at Chapel Hill to The University of North Carolina at Chapel Hill and that at Greensboro to The University of North Carolina at Greensboro and, in 1965, the name of the campus at Raleigh was changed to North Carolina State University at Raleigh.

Charlotte College was added as The University of North Carolina at Charlotte in 1965, and, in 1969, Asheville-Biltmore College and Wilmington College became The University of North Carolina at Asheville and The University of North Carolina at Wilmington respectively.

A revision of the North Carolina State Constitution adopted in November, 1970, included the following: "The General Assembly shall maintain a public system of higher education, comprising The University of North Carolina and such institutions of higher education as the General Assembly may deem wise. The General Assembly shall provide for the selection of trustees of The University of North Carolina..." In slightly different language, this provision had been in the Constitution since 1868.

On October 30, 1971, the General Assembly in special session merged, without changing their names, the remaining 10 state-supported senior institutions into the University as follows: Appalachian State University, East Carolina University, Elizabeth City State University, Fayetteville State University, North Carolina Agricultural and Technical State University, North Carolina Central University, North Carolina School of the Arts, Pembroke State University, Western Carolina University and Winston-Salem State University. This merger, which resulted in a statewide multicampus university of 16 constituent institutions, became effective on July 1, 1972.

The constitutionally authorized Board of Trustees was designated the Board of Governors, and the number was reduced to 32 members elected by the General Assembly, with authority to choose their own chairman and other officers. The Board is "responsible for the general determination, control, supervision, management, and governance of all affairs of the constituent institutions." Each constituent institution, however, has its own board of trustees of 13 members, eight of whom are appointed by the Board of Governors, four by the Governor, and one of whom, the elected president of the student body, serves *ex officio*. The principal powers of each institutional board are exercised under a delegation from the Board of Governors.

Each institution has its own faculty and student body, and each is headed by a chancellor as its chief administrative officer. Unified general policy and appropriate allocation of function are effected by the Board of Governors and by the President with the assistance of other administrative officers of the University. The General Administration office is located in Chapel Hill.

The chancellors of the constituent institutions are responsible to the President as the chief administrative and executive officer of The University of North Carolina.

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4. DALTON LIBRARY TOWER
5. DENNY BLDG.
6. GARINGER BLDG.
7. GYMNASIUM
8. BRDCKER HEALTH CENTER
9. KENNEDY BLDG.
10. MACY BLDG.
11. MOORE RESIDENCE HALL
12. OBSERVATORY
13. REESE BLDG.
14. RESIDENCE HALL CAFETERIA
15. ROWE CREATIVE ARTS BLDG
16. SANFORD RESIDENCE HALL
17. SMITH BLDG
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24. STEAM PLANT
25. WAREHOUSE
26. TENNIS COURTS
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AT CHARLOTTE
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CHARLOTTE, NORTH CAROLINA 28223

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UNCC

DERGRADUATE CATALOG 1977-78

UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE

Correspondence Directory

If, after reading this catalog, you have further questions, or wish to make specific inquiries about the programs of, or admission to, the University of North Carolina at Charlotte, please look below to find the proper office to contact.

ADMISSIONS

If you need information on admissions policies, application forms, or wish to make an appointment for an interview, please write to one of the following:

Director of Freshman Admissions
The University of North Carolina at Charlotte
UNCC Station
Charlotte, North Carolina 28223
AC 704/597-2211

Director of Transfer Admissions
The University of North Carolina at Charlotte
UNCC Station
Charlotte, North Carolina 28223
AC 704/597-2212

STUDENT AID

If you need information on scholarships, work grants or loans, please write to:

Director of Student Financial Aid
The University of North Carolina at Charlotte
UNCC Station
Charlotte, North Carolina 28223
AC 704/597-2239

CAMPUS HOUSING

If you have questions concerning housing on campus, please write to:

Director of Residence Life
The University of North Carolina at Charlotte
UNCC Station
Charlotte, North Carolina 28223
AC 704/597-2263

The University of North Carolina at Charlotte is an equal opportunity institution and subscribes to all requirements of federal law not to discriminate with respect to students, employees or applicants on the basis of sex, race, color, national origin, religion, handicapped status, age or veteran status.

THE UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE

UNDERGRADUATE CATALOG 1977-78 VOL. XIII, NO. 1

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Vivian Fogle, Director of Publications
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THE UNIVERSITY

The University of North Carolina at Charlotte is a young and growing institution located minutes north of the largest urban center in the Carolinas, a city of more than 300,000.

Enrollment at UNCC for the 1976-77 academic year was 7,815 and reflected a growth of 3.2 per cent over the previous year.

Four high rise residence halls on campus house approximately 2,000 students. More than 5,800 students commute from Charlotte and the surrounding area.

The campus covers approximately 1,000 acres of rolling hills with forests, streams and ponds. Contemporary buildings are clustered at the central campus, which is easily accessible via major highways.

The University was created by the 1976 North Carolina General Assembly, which transformed Charlotte College into a campus of the University of North Carolina. The institution, now one of 16 campuses of the University of North Carolina System, can trace its lineage to 1946 and the Charlotte Center of the University of North Carolina.

A team of a chancellor, four vice chancellors and eight deans give leadership to the University and its eight colleges. Classes are taught by outstanding educators, basically young and highly motivated.

UNCC offers the degrees of Bachelor of Arts, Bachelor of Architecture, Bachelor of Science, Bachelor of Creative Arts, Bachelor of Science in Engineering, Bachelor of Engineering Technology, Master of Science in biology and chemistry, Master of Arts in Education, Master of Education, Master of Arts in geography and mathematics, Master of Business Administration and a Master of Urban Administration.

PURPOSE

No formal statement of purpose has been adopted at UNCC in order to provide an atmosphere in which the University has freedom to grow and develop, but several principles have been agreed upon.

These principles include the decision to give first priority to undergraduate teaching and to provide graduate instruction and research opportunities in the basic natural sciences, the social sciences, the humanities, the fine arts, teacher education and certain professional areas.

The University is also dedicated to involve itself in intellectual and cultural exchange with the immediate community and the state of North Carolina.

In order not to limit its horizons to the boundary of the county, state or nation, however, the University emphasizes international issues, realizing that much of learning is international in origin and scope.

UNCC is committed to the concept of lifelong learning and provides opportunities for enrichment and renewal to members of the public in addition to those enrolled in degree and credit programs.

In its relationship with students, faculty, staff, alumni and the public, the University treats each person as an individual, respecting differences and guaranteeing individual rights of citizenship.

ACCREDITATION

UNCC is accredited, as a total institution, by the Southern Association of Colleges and Schools and also by the North Carolina Association of Colleges and Universities. Various programs within the university structure are accredited by the appropriate specialized accrediting agencies, including programs within the College of Engineering by the Engineers' Council for Professional Development, the College of Nursing by the National League for Nursing, and the Department of Chemistry by the American Chemical Society. The University's program for teacher education is approved for teacher certification by the North Carolina State Department of Education; the nursing program is approved by the North Carolina Board of Nursing.

EDUCATIONAL STRUCTURE

Each of the University's colleges deals with one or more academic areas to offer students more than 40 undergraduate degree options in 26 departments. The colleges are Architecture, Business Administration, Engineering, Human Development and Learning, Humanities, Nursing, Science and Mathematics, and Social and Behavioral Sciences. The departments within the colleges are listed with the colleges in the "Courses of Study" section of this catalog.

THE CATALOG

The *Catalog* is not an irrevocable contract. Regulations within it are subject to change by the University at any time. University regulations are policy statements to guide students, faculty and administrative officers in achieving the goals of the institution. Necessary interpretations of these policies will be made by the appropriate authorities with the interests of the students and the institution in mind. Students are encouraged to seek information as they require it about the application of any policy.

NONDISCRIMINATION

UNCC will accept all qualified students, within budgetary limitations, without regard to race, creed, color, sex or national origin, handicapped status, age or veteran status and recruits faculty and staff and conducts all programs on the same basis.

EVENING PROGRAM

The University offers a well-rounded evening program consistent with its daytime classes. Students may request any course in the *Catalog*, and if the director finds there is sufficient demand, the courses will be offered. Classes are held from 4 p.m. through 10:30 p.m. The Office of Evening Programs is open from 8:30 a.m. to 5:30 p.m. Monday through Friday. Individuals wishing to contact the director after 5:30 p.m. should telephone for an appointment. Requests for schedules, recommendations for offerings and other information concerning the evening program should be made to the Director of the Evening Program, University of North Carolina at Charlotte, UNCC Station, Charlotte, N.C. 28223.

APPLICATION DATES

Students interested in enrolling at UNCC should consult the schedule below for application dates. However, because of the number of applications received due to rapid growth, the University may be required to announce cutoff dates for applications which are earlier than those in the schedule.

Term of Entry	*Application Must Be Filed By*	*Application Must Be Completed By*
First Summer Term	May 1	May 15
Second Summer Term	June 15	July 1
Fall Semester	July 1	July 15
Spring Semester	December 1	December 15
First Summer Term	May 1	May 15
Second Summer Term	June 15	July 1

ACADEMIC CALENDAR

First Summer Session, 1977

May 23	Mon.	Residence halls open
May 23	Mon.	Registration
May 24	Tues.	Classes begin
May 25	Wed.	Last day to register or add a course
May 26	Thurs.	Last day to withdraw from School or drop a course with refund
June 7	Tues.	Last day to drop a course without grade evaluation. Last day for Engineering students to drop a course.
June 10	Fri.	No classes
June 24	Fri.	Last day to drop a course
June 29	Wed.	Last day of classes
June 30-July 1	Thurs.-Fri.	Final examinations

Second Summer Session, 1977

July 5	Tues.	Registration
July 6	Wed.	First day of classes
July 7	Thurs.	Last day to register or add a course
July 8	Fri.	Last day to withdraw from school or drop a course with refund
July 20	Wed.	Last day to drop a course without grade evaluation. Last day for Engineering students to drop a course.
Aug. 5	Fri.	Last day to drop a course
Aug. 9	Tues.	Last day of classes
Aug. 10-11	Wed.-Thurs.	Final examinations

Short Session, 1977

June 15	Wed.	Registration
June 16	Thurs.	Last day to register. Classes begin.
June 17	Fri.	Last day to withdraw from school or drop a course with refund
June 18	Sat.	Classes meet
June 20	Mon.	Last day to drop a course without grade evaluation. Last day for Engineering students to drop a course.
June 25	Sat.	Classes meet
June 29	Wed.	Last day to drop a course
July 1	Fri.	Last day of classes and/or final examinations.

Eight-Week Summer Session, 1977

June 15	Wed.	Registration
June 16	Thurs.	Classes begin
June 17	Fri.	Last day to register or add a course
June 21	Tues.	Last day to withdraw from school or drop a course with refund
June 30	Thurs.	Last day to drop a course without grade evaluation. Last day for Engineering students to drop a course.
July 4	Mon.	No classes
Aug. 4	Thurs.	Last day to drop a course
Aug. 9	Tues.	Last day of classes
Aug. 10-11	Wed.-Thurs.	Final examinations

Fall Semester, 1977

Aug. 21	Sun.	Residence halls open for new students only. Orientation begins
Aug. 22	Mon.	Faculty and Staff Convocation
Aug. 22-23	Mon.-Tues.	Orientation continues and advising
Aug. 23	Tues.	Registration and advising
Aug. 24-26	Wed.-Fri.	Residence halls open for continuing students
Aug. 26	Fri.	Last day to register without a late penalty of $10
Aug. 29	Mon.	Classes begin
Sept. 2	Fri.	Last day to register or add a course for credit
Sept. 5	Mon.	Labor Day (No Classes)
Sept. 9	Fri.	Last day to withdraw (or drop a course) with refund
Oct. 10-11	Mon.-Tues.	No classes
Oct. 19	Wed.	Reports of unsatisfactory grades by faculty
Oct. 28	Fri.	Last day to drop a course without grade evaluation. Last day for Engineering students to drop a course.
Nov. 9-11	Mon.-Fri.	Advising for spring semester 1978
Nov. 23-25	Wed.-Fri.	Thanksgiving Holidays
Dec. 1	Thurs.	Last day to file for May degrees
Dec. 2	Fri.	Last day to drop a course
Dec. 9	Fri.	Last day of classes
Dec. 12	Mon.	Final examinations begin
Dec. 16	Fri.	Final examinations end
Dec. 19	Mon.	All final grades for fall semester due in Registrar's Office.

Spring Semester, 1978

Jan. 3	Tues.	Residence halls open
Jan. 4-6	Wed.-Fri.	Orientation, advising and registration
Jan. 6	Fri.	Last day to register without a late penalty of $10
Jan. 9	Mon.	Classes begin
Jan. 13	Fri.	Last day to register or add a course for credit
Jan. 20	Fri.	Last day to withdraw (or drop a course) with refund
Feb. 13-14	Mon.-Tues.	No classes
Feb. 24	Fri.	Report of unsatisfactory grades by faculty
March 8	Wed.	Last day to drop a course without grade evaluation. Last day for Engineering students to drop a course.
March 20-24	Mon.-Fri.	Spring holidays
April 3-7	Mon.-Fri.	Pre-registration for first summer session and advising for fall semester 1978
April 18	Tues.	Last day to drop a course
April 25	Tues.	Last day of classes
April 26	Wed.	Reading day
April 27	Thurs.	Final examinations begin
May 3	Wed.	Final examinations end
May 4	Thurs.	All final grades for spring semester due in Registrar's Office
May 6	Sat.	Commencement exercises

First Summer Session, 1978

May 29	Mon.	Residence halls open
May 29	Mon.	Registration
May 30	Tues.	Classes begin
May 31	Wed.	Last day to register or add a course
June 1	Thurs.	Last day to withdraw from school or drop a course with refund
June 13	Tues.	Last day to drop a course without grade evaluation. Last day for Engineering students to drop a course.
June 28	Wed.	Last day to drop a course
July 3	Mon.	Last day of classes
July 4	Tues.	No classes
July 5-6	Wed.-Thurs.	Final examinations

Second Summer Session, 1978

July 10	Mon.	Registration
July 11	Tues.	First day of classes
July 12	Wed.	Last day to register or add a course
July 13	Thurs.	Last day to withdraw from school or drop a course with refund
July 24	Mon.	Last day to drop a course without grade evaluation. Last day for Engineering students to drop a course.
Aug. 9	Wed.	Last day to drop a course
Aug. 11	Fri	Last day of classes
Aug. 14-15	Mon.-Tues.	Final examinations

Short Session, 1978

June 19	Mon.	Registration
June 20	Tues.	Classes begin. Last day to register
June 21	Wed.	Last day to withdraw from school or drop a course with refund
June 23	Fri.	Last day to drop without grade evaluation. Last day for Engineering students to drop a course.
June 24	Sat.	Classes meet
July 4	Tues.	No classes
July 5	Wed.	Last day to drop a course
July 7	Fri.	Last day of classes and/or final examinations

Eight-Week Session, 1978

June 19	Mon.	Registration
June 20	Tues.	Classes begin
June 21	Wed.	Last day to register or add a course
June 23	Fri.	Last day to withdraw from school or drop a course with refund
July 4	Tues.	No classes
July 6	Thurs.	Last day to drop a course without grade evaluation. Last day for Engineering students to drop a course.
Aug. 8	Tues.	Last day to drop a course
Aug. 11	Fri.	Last day of classes
Aug. 14-15	Mon.-Tues.	Final examinations

STUDENT ACTIVITIES

Students at the University of North Carolina at Charlotte are encouraged to participate in extracurricular activities. Student Body Government, University Program Board, campus publications and WVFN, the student radio station, are only a few of the activities available which can play a significant role in each student's development and total education. Participation in activities, ranging in type from service and religious to athletic and social, increases a student's opportunities to acquire leadership skills and to experience the responsibilities involved in functioning within a self-governmental process.

STUDENT GOVERNMENT

The Student Body Government provides students an early experience in governmental affairs. Students often find their work in student government a useful background for later public service. The history of student government is as old as the institution itself. The University encourages student participation in its affairs and has student representatives on many of the faculty and administrative committees. The leaders of student government are committed to representing the student body and to developing students' awareness of the many facets of life at their University. All students who are regularly enrolled at UNCC, whether on a part or full-time basis, are entitled to participate in student government.

The University has now developed two forms of campus governance involving students. The University Constitution provides for involvement of student, faculty and administrative officers in a community governance plan. Under this plan, student involvement in policy-making and government of the institution is significant. The principal element of this system is the University Senate in which elected and appointed students, faculty and administrative senators convene for the purpose of recommending to the chancellor such matters as objectives and plans for the University's long-range growth and development, policies for regulating University operations, and procedures for reviewing and appraising budget policies.

The University Court is required to have a minimum of two students among its total number of nine justices. This court entertains jurisdiction over all disputes arising out of a person's relationship to or citizenship with the University, and also serves as a court of appellate review for all lower courts within the University.

The other aspect of campus governance involving student participation relates to the separate composition of a traditional system of student government. At UNCC, Student Body Government comprises:

The Executive Branch made up of the president, the vice president and the treasurer, as well as a number of committees appointed by the president.

The Student Legislature, composed of the vice president, the four class presidents, the residence hall presidents and commuter student representatives, representatives chosen by the respective students majoring in the several academic colleges of the University and graduate student representatives. The vice president serves as chairman of the Student Legislature and may vote only to break a tie.

The Student Judiciary, composed of the Student Superior Court, Residence Courts and the Elections Board. These bodies were established for the purpose of judging violations of the rules and regulations of the University, the student Constitution and the various student statutes and for administering the Honor Code. This code, adopted by the student body during the fall semester of 1965, reads as follows:

> Under the Honor Code you are on your honor not to cheat, lie, or steal; and if you see another student doing so, you are on your honor to report the individual and the circumstance to the appropriate student agency.

UNIVERSITY PROGRAM BOARD

The Program Board develops, administers and supervises the social, cultural, educational and recreational programs of an all-University nature for the students, faculty and staff. It provides an opportunity for students to participate in activities conducive to personal, social and educational development and tries to directly reflect student needs and interests. These programs include art exhibits, concerts, dances, coffee houses, travel programs, lectures, films and other special activities.

The Program Board consists of the chairperson, vice chairperson, secretary-treasurer, director of the Social Committee, director of the Rathskeller Committee, director of the Fine Arts Committee, director of the Films Committee, director of the Special Activities-Organizations Committee, and two members elected at-large from the student body. The chairperson and vice chairperson and two members at-large are elected in the annual campuswide spring elections. The directors are selected by an application-interview-election process during spring semester.

STUDENT MEDIA BOARD

The Student Media Board is comprised of student, faculty and administrative staff members, as well as representatives of the various student publications. Its purposes are to promote the objectives of each publication and to guarantee editorial freedom to the publications within the framework of responsible journalism. The individual media under the Media Board are as follows:

Sanskrit

Sanskrit is a magazine published several times each year by students interested in the arts. Creative work in writing, drawing, photography and other arts is welcomed by the editor. Students are invited to become members of the magazine staff.

Carolina Journal

Students publish a weekly newspaper, *The Carolina Journal,* to cover campus news and provide journalistic experience. Experience on a campus newspaper, together with a broad educational base, often provides the background for a career on a newspaper or a magazine. The campus newspaper provides a vital service to the entire University community by keeping its members informed of issues of common concern and interest.

Rogues 'n Rascals

The yearbook, *Rogues 'n Rascals,* is another publication which provides both a service to the University and an opportunity for student journalists to gain essential skills for later careers. The yearbook is designed to provide a valid picture of the spirit of campus life. It is valued as an organized pictorial record and as an opportunity for creative student journalists to produce a book which is aesthetically pleasing and representative of the student experience at UNCC. A copy of *Rogues 'n Rascals* is provided to all students taking eight or more semester hours of work each semester during the academic year. Others may obtain a copy upon payment of $8.50.

Radio Station WVFN

Radio Station WVFN was established during the 1970-71 academic year. The station's purpose is to provide practical experience to those interested in the field of broadcasting and broadcast journalism and to serve as an instrument for expression by students, faculty and administration concerning all facets of University life. WVFN achieved FM-Educational status during 1976.

ATHLETICS

The University of North Carolina at Charlotte is a member of the newly formed Sun Belt Conference. Also included in the new alignment are Jacksonville University, the University of South Florida, the University of New Orleans, the University of South Alabama and Georgia State University. The 1976-77 edition of the 49ers faced one of the most demanding schedules in the history of the University, taking on such national powers as Wake Forest, Tennessee, Florida State, Creighton and Virginia Commonwealth. The 49ers also participated in two holiday tournaments, the Charlotte Invitational and the Roadrunner Classic in New Mexico.

The University fields men's intercollegiate teams in basketball, tennis, golf, soccer and bowling. Women's teams include basketball, volleyball, tennis, golf, softball and bowling.

UNCC boasts one of the finest physical education facilities in the nation. Designed primarily for the participant, the gymnasium features six indoor basketball courts, an Olympic-size swimming pool, handball and squash courts, weight and wrestling rooms, a well-equipped training room and lockers for 6,000 students and faculty. It will seat 3,200 spectators for basketball and other intercollegiate activities. In addition, the gym houses classrooms and an auditorium for audiovisual presentations.

A comprehensive program for intramural sports is offered to provide enjoyable recreational opportunities for the UNCC student body. The program includes team, dual and individual sports for both men and women, co-recreational activities and ample opportunities for unstructured "free play" activities. The gymnasium is open for student use throughout the week, at night and on weekends.

RELIGIOUS LIFE

The nurture of the spirit of man is considered an important part of student services, and many opportunities are given for students of all religious groups to hold discussions and program. Individual student religious groups are encouraged and hold regular meetings on campus.

The program in religious life is made possible by voluntary contributions from a number of religious groups in Charlotte and North Carolina. It is carried out under the aegis of the United Religious Ministry at the University of North Carolina at Charlotte. The director of the URM serves as the coordinator of the University religious programs and activities and is available for counseling.

Assisting the director of the URM are University chaplains sponsored by denominational and other agencies, as well as selected clergymen from the churches of Charlotte who serve as "dorm ministers" and who are present for counseling. Currently there are two University chaplains, each of whom conducts a ministry in the name of his sponsoring church or churches.

The Baptist Student Union provides opportunities for students to plan and participate in experiences of Christian community, inquiry, worship, mission, witness and social action. Membership is open to anyone on campus regardless of religious affiliation. A council of officers is elected annually in the spring.

Regular meetings are held each Tuesday and Thursday from 12:30 to 1:30 p.m. Retreats, conferences, and work/ministry projects off campus are scheduled several times each year. Concerts and other special events are sponsored each semester on the campus.

Opportunities are available through BSU for small groups and individuals to participate in mission and church related work each summer, and for short term social action and ministry projects in other urban and non-urban areas as well as in Charlotte.

The Cooperative Christian Ministry in Higher Education is a united ministry for faculty, staff and students at UNCC and the wider Charlotte community. The work is sponsored by the United Methodist Church and the Presbyterian Church in the United States.

The URM works with all people on campus to share life, teaching, learning and the celebration of human community. The campus ministers and the director of the URM may be contacted through the University telephone exchange, extension 2344. An office for the URM chaplains and a small reading room are located in Sanford Hall.

ORGANIZATIONS

Academic

Alpha Kappa Psi is a national professional fraternity made up of students and faculty of the College of Business Administration. Membership is open to males upon presentation of evidence of satisfactory academic work. Professional and social activities are designed to promote fellowship and professional interest among members.

American Society of Civil Engineers-Student Club was organized for the purpose of meeting with practicing civil engineers, taking field trips, sponsoring civil engineers speakers and participating in Engineering College activities.

American Society of Mechanical Engineers-Student Chapter provides the same opportunities as above for students interested in mechanical engineering.

American Institute of Architects-Student Chapter provides opportunities for professional development of architectural students through contacts with local architects and attendance at local, regional and national conferences.

American Society of Personnel Administration-UNCC Chapter provides opportunity for exposure to the business community through speakers, tours, general rap sessions and monthly dinner meetings with the Charlotte Chapter of ASPA.

Beta Iota Mu, the Biology Club, was formed to increase knowledge and interest in the biological sciences, to utilize professional biologists and students in a process of mutually exploring problems of biology and to stimulate fellowship among students and faculty interested in biological sciences.

The Chemistry Society is open to students with a deep interest in chemistry and is designed to afford opportunity for members to become better acquainted, to secure the intellectual stimulation that arises from professional association and to install a professional pride in chemistry and chemical engineering.

Chez les Français, the French Club, is open to all students interested in the language, customs and culture of the French people. Social and educational meetings are held for the purpose of broadening the members' knowledge of French civilization and increasing their conversational ability in the French language.

El Club Español is open to students interested in fellowship and conversation in Spanish. The meetings are informal and are usually conducted in both Spanish and English. Frequently, Spanish speaking guests talk to members of the club about the Hispanic countries. The students also participate in the presentation of plays, songs, dances and films.

The UNCC German Club was formed in 1972 and currently has about 25 members. Its purpose is to promote interest and participation in all aspects of German culture. To this end, it has, in the past year, sponsored a dramatic group which won first place in the Clemson University Drama Contest. To provide an opportunity in which German language can be practiced informally, the club hosts the Charlottenburger Stammtisch, held bi-weekly either at Gus's or in the Cone University Center. The club also sponsors German films.

The purpose of the *History Club,* founded in 1975, is to develop within interested students an increased individual awareness of the importance of history as a field of study and to create a bond among those students who have chosen history as their major field. Both academic and social functions are used to carry out this purpose.

The Engineers Club was the first organization founded for College of Engineering students. The Engineers Club served as a catalyst for the discipline clubs and produces a forum for interdisciplinary activities which are so important in the world today. The Engineers Club coordinates and produces the annual Engineering Fair.

The Society of Physics Students is open to all students who are interested in developing friendships with other members of the local scientific community. The activities of the society provide an additional medium through which students may advance their knowledge of science.

University Chapter of the Student National Education Association, which is affiliated with the North Carolina Education Association, is to inform students of the possibilities offered in the field of education, to encourage qualified students to become teachers and to provide students with an opportunity to discuss educational issues and problems.

The Student Nurse's Association is a national organization open to all students majoring in nursing. The SNA is affiliated with the district, state and national organization and is actively supported by students and faculty of the College of Nursing. Meeting once a month, the SNA endeavors to increase a sense of individual responsibility for creating and maintaining high ideals of nursing students.

Other academic clubs are:

Accounting Club
Geography Club
History Club
Institute of Electrical and Electronics Engineers-Student Chapter
Math Club
Nu Sigma Alpha - Law Enforcement Fraternity
Sociology Club
ETA of North Carolina Chapter of Alpha Kappa Delta - Sociology Honor Society
Physical

The Fencing Club is organized to promote interest in the sport of fencing.

The Football Club has an active membership and plays a full fall inter-collegiate schedule.

The Outing Club organizes hiking, rappelling, canoeing and other outdoor excursions.

The Scuba Club is open to all students and faculty as well as those persons trained through UNCC. Non-divers are encouraged to join in order to improve their aquatic skills, participate in social activities and travel inexpensively with the club. As a member of the larger Piedmont Diving and Rescue Association, the Scuba Club has diving rights at three quarries spread throughout the Piedmont section of North Carolina.

The Soara Aero Club, Inc. is open to all students and faculty interested in flying.

Social Fraternities and Sororities

The University has an active and flourishing fraternity and sorority system. Guided by representatives of each fraternity or sorority, the Interfraternity Council and the Panhellenic Society, respectively, guide and coordinate the activities and organizational concerns of their constituents.

The following national fraternities have been chartered for UNCC: Chi Phi, Kappa Alpha Psi, Kappa Sigma, Lambda Chi Alpha, Omega Psi Phi, Pi Kappa Phi and Sigmi Phi Epsilon.

The national sororities affiliated with the campus are Alpha Delta Pi, Delta Delta Delta, Delta Sigma Theta, Delta Zeta and Zeta Tau Alpha.

One local fraternity Delta Kappa, is working toward national affiliation.

Service

Civinettes is a girls' service club whose membership is open to any interested girl. The club is active in school, community and international Civitan projects. One of the most important community service projects the Civinettes have participated in is the United Way Campaign. Other community service projects they have been involved in include raising money for the National Association for Retarded Children, giving a party for boys and girls from a children's home and helping sponsor a Bloodmobile at UNCC. Civinettes have been active in campus affairs, also. They have undertaken a project to recycle paper on campus, to paint and place trashcans for papers at different locations on the UNCC campus and to serve as ushers for the University Forum.

Other service clubs include Circle K and the Crescents.

Musical

The University Chorus has added much to the atmosphere of the school. Students enrolled in choral groups meet regularly with the dual purpose of enjoying singing together and improving their own musical abilities. The Chorus furnishes musical programs for special events during the year. All students are eligible to enroll for one semester hour of credit without audition.

Political

The Young Democrats Club and the Young Republicans Club give the student an opportunity to engage in practical politics as well as to hear speakers from local, state and national levels of our political parties. Membership is open to all interested students.

Religious

Student religious groups on campus include the Baptist Student Union, the Christian Fellowship, the Christian Science Organization, and the Newman Club.

Special Interests

The Black Student Union, an organization of Black students, undertakes projects of awareness and involvement in the Black community in cooperation with the Black Studies program at UNCC.

Children of the Sun, the Black gospel choir, preserves and promotes Black music.

The Commuter Association was chartered in the spring of 1975 to bring commuting students together, to promote services programs for commuters and to serve as a voice for the commuter population to the rest of the University community.

University Forum Council

The University Forum provides a campus platform for outstanding national figures to examine key issues in depth. The University Forum Council, composed of representatives from the student body, the faculty, the administration and the community, sponsors the Forum each year. Usually held during the spring, the Forum was initiated in 1966.

HONORS AND AWARDS

A number of individual student honors and awards for academic achievement, leadership and service are given annually through the various colleges and on a University-wide basis. Currently, there are two campus honoraries, the Society of 49 and Phi Alpha Theta.

The Society of 49 was created for the purpose of recognizing outstanding leadership and achievement among students who have made significant contributions to the development of the University community. Twenty-four to 30 students are selected each year, 75 percent of whom are seniors and 25 percent of whom are juniors. Selection is primarily based on a point system which considers academics, leadership, service and activities. The student receiving the highest number of points is given the Cindy Holmes Award in memory of the late Cindy Holmes whose unselfish contributions to the University represent the highest ideals of the Society.

Phi Alpha Theta, which has chapters in the United States, Canada and the Philippines, has as its purpose to encourage the study of history and to acknowledge academic achievement in history. To be eligible for membership, undergraduates must have completed at least 12 semester hours in history with a grade average in all history courses of 3.1 or better, an overall grade average of 3.0 in other courses, and must rank in the upper 35 per cent of their respective classes. Graduate students who recently received their undergraduate degrees may apply on the basis of their undergraduate records. Graduate students who are not recent graduates must have completed at least one-third of the requirements for the Master's degree (at least 10 credits in history) and have a straight *B* average or better.

The Honor Society of the College of Nursing was established for the purpose of recognizing superior knowledge, recognizing the development of leadership qualities, fostering high professional standards, encouraging creative work and strengthening commit-

ment to the ideals and purposes of the nursing profession. Candidates for the honor society are selected from baccalaureate students who have completed at least one-half of the required nursing curriculum with a cumulative grade average of 3.0 or better. Graduate nurses with a baccalaureate or higher degree who have demonstrated marked achievement in the field of nursing are also eligible for membership.

CHANCELLOR'S LIST

The Chancellor's List is a record of all students whose academic record merits special recognition from the University. In order to qualify for the Chancellor's List, a student must complete 15 semester hours with grades of *A*, *B* or *C* and achieve a quality point average of at least 3.00.

COMMENCEMENT MARSHALS

The juniors who have the highest scholastic averages are honored by being named commencement marshals. The marshal who has the best academic record is designated chief marshal. For the purpose of this selection, the University considers as juniors those students who will have completed 89 hours of degree work at the end of the spring semester. Juniors who have not completed their last two semesters of work or their last 24 credit hours at the University of North Carolina at Charlotte shall not be considered as eligible as marshals.

GENERAL ALUMNI ASSOCIATION

The General Alumni Association of the University of North Carolina at Charlotte is the recognized official alumni organization. Graduates of the University are encouraged to become contributors to the Alumni Association so that the University may maintain lifelong contacts with each individual. Persons attending the University of North Carolina at Charlotte for one semester are eligible for membership in the General Alumni Association.

Membership can help the student maintain friendships of college days and obtain useful information from the University about programs and social activities. The General Alumni Association is a Patron of Excellence of the University and contributes to worthy projects. Thus, the alumnus can support Alma Mater in a useful and efficient way.

A magazine is provided to contributing members of the Alumni Association, and group tours to vacation spots, such as Hawaii, are organized.

The graduate should notify the Alumni Office of address changes and significant events in his or her life, such as marriage, births,

new positions and honors. In this way, adequate records can be maintained, and the Alumni Office can pass good news along to friends of the alumnus.

FACILITIES AND SERVICES

FACILITIES

Department of Public Safety

The Department of Public Safety, located in the Reese Administration Building, is designed to serve the students, faculty and staff of the University and to protect their persons and property. Police service to the University community is provided 24 hours a day, seven days a week. *Campus Police Officers are commissioned by the attorney general of North Carolina and have full police powers on campus.* Ninety percent of these officers are students, either at UNCC or other institutions, and are sympathetic with the problems of students.

The department provides the University community with a number of other services which bring the department into many areas in what are not normally considered police activities. Assistance for minor car troubles, transportation of sick and injured to the Health Center, operating a "lost and found," delivering emergency messages and assisting owners in gaining entry into locked vehicles are examples of these activities. Guards are assigned to the residence halls for the protection and service of the resident students. In addition to periodic checks of the dorms during the evening and night, the dorm guards have duplicate keys to assist students locked out of their rooms, and the officers maintain a petty cash box for change purposes.

Generally, access to all buildings and all rooms during non-class hours may be gained only with the written permission of a faculty member. Campus Security should be contacted to gain entrance into a locked room.

All cars parked on campus must be registered and display a UNCC parking permit. Meters and a gated lot are available for visitors. Copies of regulations with campus maps are available upon purchasing a decal or a request at the Traffic Office. Parking regulations are in effect 24 hours a day. Temporary permits are available from Traffic Office for guests or for a student's vehicle that is only temporarily on campus or one used while a registered vehicle is being repaired.

Safety Coordinator

Another important service offered by the Department of Public Safety is the promotion of safety and accident prevention through the work of a safety coordinator.

It is the responsibility of the coordinator to investigate accidents on campus, conduct safety inspections of all buildings, maintain all reports required by the N.C. Department of Labor and to generally ensure that all persons within the University community are provided with a safe and healthful environment, conducive to the prevention of illness or injury.

Those who have complaints or knowledge of safety hazards are invited to bring them to the attention of the safety coordinator without fear of retaliation. All complaints or notification of hazards will be acted upon and the employee or student notified of the response.

Emergency Numbers

Do not hesitate to contact the Campus Police Office in the event of a problem. In addition, your observations and criticisms of our service are valuable in the continuing process of review, analysis and evaluation. The director of the Department of Public Safety invites your visits and your comments.

Emergency numbers are:

CAMPUS POLICE	597-2200
HEALTH SERVICE	(24 hours a day) 597-2265
OPERATOR	(On campus dial "O") 597-2000
MECKLENBURG COUNTY POLICE	9-374-2333
SAFETY COORDINATOR	597-2449

University Residence Halls

UNCC on-campus housing offers students an experience filled with opportunities. Four high-rise residence halls, housing approximately 500 students each, are designed to provide each student with both a degree of privacy and the opportunity to enjoy the close relationship of small group living. Professional staff members, as well as student floor advisers, are committed to working with students in the development of a sense of community conducive to academic and personal growth through programming, advising and acquainting students with the many resources of the University. Program offerings in leadership training, career and life planning, academic enrichment, and many areas of personal awareness are all designed to further the total development of each student.

Each room includes study and sleeping areas for two students, equipped with built-in dressers, study desks, chairs and closets. In addition, each floor is equipped with a central lounge, study, typing and seminar rooms. Two high-speed elevators service each air-conditioned residence hall.

The main floor contains the office of the residence coordinator, student mail boxes, a concessions area, library, lounge and student government offices. The lower floor contains a recreation room and laundry room.

The University has no requirement regarding on-campus residence. However, space is limited and is filled early. If a student plans to live in the residence halls, he or she should apply as soon as possible. An application form will be sent to the entering student at the time of his or her final admission to the University. A $50 prepayment must accompany each application.

Library

The J. Murrey Atkins Library is at the center of the development of the University of North Carolina at Charlotte. Housed in a two-story services building and the 11-story Dalton Tower, the Library is attractive and inviting and offers students a variety of learning materials and services.

There is a collection of approximately 235,000 volumes and some 300,000 units of microform.

More than 5,000 current periodicals and serials are received through subscriptions. Back files of certain periodicals and newspapers—such as *The New York Times, The Charlotte Observer, The Charlotte News* and *The Wall Street Journal*—are available on microfilm.

The Library of Congress classification system is used for the arrangement of books and periodicals.

Also available to the University Community are a number of special collections.

A depository since 1964, the library now has 70,000 U.S. government documents and a number of U.N. publications. Hundreds of new documents arrive each month.

An archives collection includes manuscripts, photographs and other materials relating to the history of the University. Also found is the Rare Book Collection, which contains literary first editions, early printed works, fine press books and a large number of seventeenth and eighteenth century English plays.

A Caroliniana collection of reference materials relating to North and South Carolina is located in the lobby.

A staff of some 60 people, including 16 librarians, acquires, organizes and services the collections. Reference personnel are available to assist students in finding information, researching class projects and obtaining materials for course papers. They regularly conduct classes in library use.

The library also administers the University's Oral History Program. Tape-recorded interviews with a number of distinguished

citizens of the Piedmont have been conducted, and these are available for use by the Library's clientele.

Library materials assigned for class reading are housed on the tenth floor of the Dalton Tower. Sound recordings, audio-visual media, college catalogs, and education curriculum materials are also located there.

In addition to materials directly related to classroom work, the library provides students with general and recreational reading. Comfortable reading areas are spaced throughout the building. Student carrels and tables are available for concentrated study. Persons doing special research may apply for private study rooms located in the tower.

Exhibits on topics of special interest to the campus and the community are featured in display cases on the main and second floors. There is also an excellent art collection dispersed throughout the Library including sculpture, oils, lithographs, watercolors and etchings.

The Friends of UNCC have played a significant role in developing the library collection. Individual donors have also contributed greatly to the growth of the J. Murrey Atkins Library.

Bonnie E. Cone University Center

The Cone University Center is a place where you can meet informally with members of the faculty and staff, with friends, make new acquaintances, lounge between classes, participate in student activities, eat, and, in general, its a very comfortable place to spend your free time.

Within the University Center are located the offices of the Student Body Government, Carolina Journal, WVFN, Sanskrit, Rogues and Rascals, Black Student Union, Student Financial Services, dean of students and the administrative offices for the University Center.

Some of the services and facilities that you will be using include: Gamesroom, Information Desk, the Little Gallery, meeting rooms with facilities for dances, lectures films, and banquets.

Rathskeller

The Rathskeller is located beneath the Residence Hall Cafeteria. Within it is a snack bar which serves pizza, sandwiches made to order, hot dogs, hamburgers and ice cream. The Rathskeller Program Committee offers a wide variety of entertainment for your enjoyment including: name coffeehouse entertainment, movies, foosball and TV viewing. It is the perfect place for your evening entertainment and social enjoyment.

SERVICES

Transportation

Charlotte Transit System provides bus transportation from Charlotte to the campus on a regular schedule connecting with established routes. Detailed information regarding routes, times and fares may be obtained from the main office of the Charlotte Transit System or at the University Bookstore. Weekly passes may be purchased at either location.

University Counseling Center

The University Counseling Center offers the services of professionally trained counselors and psychologists to the University community without charge. Initial counseling appointments may be arranged in Room 06 of the Atkins Building or by calling 597-2104. All counseling interviews are treated in a confidential manner.

The aim of the Counseling Center is to help individuals to gain greater self-understanding, to deal effectively with important decisions and to resolve current problems. The counseling process is individualized for each person to meet his particular needs. It may include individual sessions with a professional counselor, group meetings, use of standardized tests of interests, aptitudes and personality characteristics, or utilization of an extensive occupational-educational library. The staff is also available for consultation to University faculty, groups and agencies.

In addition, the Counseling Center offers special services in reading and study skills. The contents of the programs are offered to both group and individual bases to meet the specific needs of individual students. Group programs concentrate on short sessions in speed reading, study skills, note taking, brief writing and effective listening. Students are offered the opportunity to continue the group programs on an individualized basis in an open atmosphere. Individualized studies can be broadened to include vocabulary development, spelling, reading and listening improvement, mathematics and English. The program is administered by a professionally trained Educational Services Clinician in cooperation with the center's psychologists and counselors.

Placement

The Placement Office (located in Room 01, Atkins Library) functions as the central placement agency for the campus and serves undergraduates, graduate students and alumni by assisting them in developing their career objectives (preferably beginning with their admission to the University) and in obtaining employment. Services include career planning and guidance; advising on the techniques of employment prospecting, on job selection and analysis, on interviewing, on the preparation of resumes and writing business letters; maintaining, for student browsing, files of information on prospective employers (business firms, governmen-

tal agencies, school systems) and on graduate school fellowships and assistantships; providing liaison between employers or graduate schools and graduates through on-campus recruiting by employers and graduate school representatives and by individual referral for current employment openings.

Students who wish to earn part of their educational expenses or to gain work experience may register for part-time, full-time or summer employment off campus. Every effort is made to assist the student who expresses a need for employment and, where possible, to place him in a position relating to his vocational goal.

Degree candidates register with the Placement Office on a voluntary basis early in their graduating year by completing a resume and requesting three professors and/or employers to complete evaluations on forms provided by the Placement Office. At the present time, these credentials are retained on a permanent basis.

The Family Educational Rights and Privacy Act of 1974 provides that the release of these credentials or information in the file must be authorized in writing by the registrant unless the information is a matter of public record, and that under certain conditions each student may have the right to review his/or her placement file (resume and evaluations) and to obtain a copy of it for a fee.

All employers and schools interviewing on campus or listing openings with the Placement Office must indicate that they are equal opportunity employers, that is, that in hiring, compensation, promotion, training or admission they do not discriminate on the basis of race, color, religion, sex or national origin.

International Student Services

Director: Earl L. Backman
International Student Adviser: Marian Beane

The University of North Carolina at Charlotte believes in the concept of international exchange. It welcomes students from other countries to its campus, where cultural exchanges with Americans can take place.

The international student adviser assists foreign students with personal problems and with adjustment to the customs and procedures of American higher education. The adviser can give assistance with visas, government regulations, employment, housing and general orientation to American life. The office is located in 205 Cone University Center.

Study Abroad

The Office for International Studies provides information and advice to American students planning to study abroad. This includes programs coordinated by UNCC as well as cooperative

programs with other institutions. The office is located in 113 Denny Building.

Computer Center

The Computer Center provides digital computer support to the academic and administrative programs at the University. Less than 20 years ago the use of computers was at its infancy, and now it has been said that this is the "Computer Decade." In fact, the computer revolution has been compared in its impact on society to the industrial revolution. Students are encouraged to learn about computer utility through use of the resources in the Computer Center. These resources include a Burroughs B6700 Computer System, a terminal connection to the Triangle Universities Computation Center and a variety of software.

Use of the computer is widespread at UNCC. Examples of its use in academic areas are the study of programming languages in computer science, statistical analysis of data files for sociology, history, political science and psychology, transportation problem solving in geography, and molecular analysis in chemistry. Examples of its use in administrative areas are maintenance of vendor and budget files for the business office and the processing of student information for the Records and Admissions Office.

Student Health Service

The Student Health Service is housed in a building completed in 1971. When the University is in session, it is operated 24 hours a day, seven days a week. The building has beds for 22 patients, with eight semi-private rooms and six private rooms. The clinic is operated from 9:00 - 12:00 and 2:00 - 4:30 - Monday through Friday on a walk-in basis. A physician is employed on a full-time basis. In addition to the daily clinic, he is on call for emergencies. Registered nurses are on duty at all times.

The Student Health Service offers comprehensive care to all students, with referral available when the services of a specialist are required.

Food Service

Resident students contract for room and board which provides three meals each day on either a five-day or a seven-day plan, as they choose. These students are permitted to take meals at any one of the four food service locations on campus: the Residence Halls Cafeteria, the University Center Cafeteria, the Denny Snack Bar, or the Rathskeller. A dollar allowance is given for meals taken in other than the Residence Halls Cafeteria and resident students pay cash for anything over the established amount.

Commuter students have several options for eating on campus. They may purchase a meal ticket and be on the same basis as the

resident student with the transferability privilege. This is accomplished by going to the Office of Special Services in Rowe Building and making the necessary arrangements. In addition, the commuter student may purchase all his meals for cash at the University Center Cafeteria, the Denny Snack Bar, or the Rathskeller.

Vending machines are located throughout the campus, and the vending area in the University Center has a micro-wave oven for heating items available in the machines.

Hours of operation of all food service units are posted in each unit. Generally speaking, food service of one kind or another is available on campus from 7:00 a.m. to 11:00 p.m.; vending is, of course, available whenever buildings are open.

Office of Continuing Education and Summer Programs

Director: Seth H. Ellis
Coordinators: Dorothea G. Lakin
John D. Moore

The Office of Continuing Education and Summer Programs is responsible for three separate areas of University programming: Continuing Education, Extension, and Summer Sessions.

(a) Continuing Education or Adult Education is a series of programs tailored to the needs of the Charlotte area, taught either on or off the UNCC campus. Such programs may be designed for the general public or for special interest groups, but are usually of short duration and limited scope. They, therefore, do not award academic credit but may award continuing education units (CEU's). The CEU is rapidly becoming a universal unit of measure for non-academic involvement in educational programs, and records of CEU's are kept permanently. One CEU is awarded for every 10 hours of structured educational activity. Teachers of continuing education programs are contracted from the UNCC faculty and the community at large. Requests for programs or application to conduct a continuing education project should be submitted to the Office of Continuing Education and Summer Programs.

(b) Extension is defined as programs for academic credit, offered off or extended from the UNCC campus. Extension work is limited to the academic areas approved for credit by The University of North Carolina Board of Governors and to courses approved by the UNCC faculty. Faculty teaching in extension must be approved by the academic department which awards the credit. Extension credit may be applied toward a degree at UNCC, but is limited by the residency required in each degree program.

(c) Summer Sessions are held each summer, beginning in May and running until mid-August. Two terms of six weeks each are supplemented by short-term courses, institutes, and workshops.

Several longer-termed courses are also offered. Continuing students, visitors, or students from the community should find their needs answered by offerings from many disciplines and for many time-frames. Summer Session schedules are usually available during the first week in February from the Office of Continuing Education and Summer Programs.

Institute for Urban Studies and Community Service

Director: James L. Cox
Research Director: W. Patrick Beaton
Associate Director for Community Service: Larry G. Owen
Institute Associate: Mary Dawn Liston
Administrative Assistant: Jane A. Begole

The Institute for Urban Studies and Community Service conducts a variety of programs which provide faculty and students with opportunities to become involved in urban research, community service, and continuing education programs. College and departmental faculty participate along with Institute staff on numerous projects funded by contracts and grants. Students can become involved in these projects as part-time research assistants. Student participation in Institute projects can also provide the basis for term papers, graduate theses, and internships.

The Institute formulates its long-term efforts with the advice of an advisory committee composed of prominent persons from the public and private sectors from the Metrolina region which meets several times each year. It also cooperates with urban centers at the University of North Carolina at Chapel Hill and North Carolina State University at Raleigh in an effort to develop jointly planned programs. In 1976, this cooperation led to a statewide conference on local mass transit problems.

Recent research projects sponsored by the Institute included studies on governmental reorganization, wholesale trade, and the relationship of multi-county regional organizations to North Carolina state and local government. Current efforts include the development of a statewide study of multi-county regionalism. The Institute also began publishing a newsletter on regionalism entitled "North Carolina Regional News" in the fall of 1975. A data bank containing information on real property in Mecklenburg County has recently been developed.

The community service role of the Institute focuses upon community education, in-service training programs for public administrators and technical assistance to city and county governments. These activities recently included a report on alternative systems of representation in consolidated city-county governments and a series of workshops for the Mecklenburg County Board of Commissioners and the Charlotte City Council on governmental reorganization. The Institute provides non-credit seminars and short courses for public administrators on topics such as "public management development" and "management by objectives." Community education programs dealing with land use problems have become a

continuing Institute effort. The Institute is also a member of the National Citizen Involvement Network and has assumed responsibility for the community goals program begun by Dimensions for Charlotte-Mecklenburg.

Learning Resources Center

The Learning Resources Center offers a wide range of audio and visual communication services to both students and faculty engaged in University-sponsored functions. The Center is located in Atkins 200 and is open from 7:30 a.m. to 5:00 p.m. Monday through Friday.

The versatile and creative media production staff is capable of producing high quality color slides, overhead transparencies, black and white photographs, video tapes, multi-media programs, as well as high impact multi-image presentations. All of these media productions are effective for improving classroom instruction, professional presentations, student projects and public relations.

The Learning Resources Center loans communications equipment for short-term use to students and faculty. Among the devices available are motion picture projectors, slide and filmstrip projectors, overhead and opaque projectors, photographic cameras, audio and video tape recorders, public address systems, record players and projector screens. The staff offers advice on the selection of appropriate equipment as well as operating instructions if requested.

A small television studio is available for students and faculty to produce black and white video tapes. Professional assistance is available on request. The studio is used for recording interviews with campus guests, presentation of student projects, producing auto-tutorial laboratory tapes, and providing immediate feedback of performance for individual or group analysis. Equipment is available for playback of video tapes in University classrooms.

Approximately 400 University owned 16mm motion pictures are distributed through the Learning Resources Center. Students and faculty may borrow these films without charge. Through an ongoing film preview program, new films are constantly being evaluated and purchased. Your assistance is requested in identifying and evaluating new films. Films are purchased with funds from each departmental library materials allocation. If appropriate films are not available on campus, our staff will coordinate your film rental orders from outside film distributors. Rental fees are charged to each department or individual.

Recognizing that audio and visual communications are a vital and integral part of every person's professional development, the Learning Resources staff offers a variety of communications workshops on such topics as television production, color slide production, slide duplication, dry mounting, laminating, thermal and diazo transparency production, projector operation, audio and video tape recording, and instructional development. These workshops can be requested and planned by any student or faculty group interested in expanding their communications skills.

Bookstore

In addition to required textbooks, the campus bookstore makes available paperback books for leisure reading, records, sweatshirts and jackets, campus emblems, personal grooming items and routine school supplies and offers film developing and printing service.

ADMISSION PROCEDURES

ADMISSION TO THE UNIVERSITY

The University considers all applications without regard to race, color or sex. It reserves the right to withhold the admission of any applicant who fails to meet any of the requirements for admission. In addition, it reserves the right to restrict enrollments when necessary because of budgetary or other constraints. Applications for either regular semester or the summer terms should be submitted and completed no later than the dates published on page 3. In some programs, the vacancies will be filled several weeks prior to those deadlines.

The Admissions Decision

All applications for admission are reviewed as soon as the required credentials are received. All relevant factors are considered, with major emphasis being placed on the academic history of the applicant. The intent of the University is to offer admission to those applicants whose credentials indicate a strong likelihood for success in their selected curricula.

Offers of admission are *conditional* until all required credentials such as final transcripts and the medical report form have been received. The failure of an applicant to supply such evidence may result in the revocation of the offer of admission.

Undergraduate students should address their requests for applications and information to the Director of Undergraduate Admissions, UNCC, Charlotte, North Carolina 28223. Inquiries concerning post-baccalaureate or graduate study should be made to the Director of Graduate Studies, UNCC, Charlotte, North Carolina 28223.

REQUIREMENTS FOR UNDERGRADUATE ADMISSION

General Requirements

1. Satisfactory evidence of good character.

2. Evidence of good physical and mental health. A medical report form is sent to successful applicants along with the notice of conditional admission. The completed form must be accepted by the University Health Service before an admission can be made final.

3. Satisfactory record of scholastic achievement.

4. Application fee of $10, which is neither deductible nor refundable.

5. The applicant bears the responsibility for supplying the University with all required credentials.

Requirements for consideration for admission to Freshman Standing:

1. Transcript of Secondary School study which identifies the applicant as a graduate of an accredited secondary school and bears a recommendation by a school official. Lack of any recommendation will make it necessary to return the record to the school for completion. The record should show the grades through the 11th year, senior year courses in progress, rank in class and pertinent test data. A high school equivalency certificate may be submitted in lieu of a secondary school diploma.

2. Sixteen acceptable units, 13 of which must represent basic academic courses. The suggested distribution is: English (4); algebra and geometry (3); one foreign language (2); social sciences (2); natural science (1); and electives (4). Emphasis will vary according to the college or program into which admission is sought. Engineering and Architecture applicants must present algebra, trigonometry, plane and solid geometry, or the equivalent in integrated courses. Nursing applicants must present biology and chemistry.

3. An *official* score report from the American College Testing Program (ACT) or the Scholastic Aptitude Test of the College Entrance Examination Board (SAT).

4. Transfer applicants who present fewer than 24 hours of transferable work are considered *applicants for freshman standing* and, in addition to the requirements listed above, they must have attained at least a *C* average in their post-secondary study, as evidenced by official transcripts mailed directly to the Office of Undergraduate Admissions by each institution attended. A Confidential Statement is required from the last institution regularly attended.

Early Admission

The University will admit specially talented high school students after they have completed the eleventh grade (achieved bona fide senior status as defined by their respective school systems) providing they meet other standards required for freshman admission.

A letter of recommendation from the student's secondary school principal is required for consideration for early admission.

Scholastic Aptitude Tests

While the University recognizes that test scores are less important than academic history in predicting the chances for collegiate success, applicants are expected to meet minimum score requirements, as follow:

SAT - A total score of 800, with neither the Verbal nor the Math scores below 350. A Math score of 450 or higher is expected of applicants for the programs in Architecture and Engineering.

ACT - A composite score of 18 except that applicants for programs in Architecture and Engineering are expected to present a Math score of 20 or higher.

Students may obtain test information and application forms from their school counselors or by writing to:

American College Testing Program
P.O. Box 168
Iowa City, Iowa 52240

Educational Testing Service
P.O. Box 592
Princeton, New Jersey 08540

Educational Testing Service
P.O. Box 1025
Berkeley, California 94701

Admission of Transfer Students

Applicants who have attended other post-secondary institutions *without earning at least 24 semester hours in transferable courses* are considered to be applicants for freshman standing. *(See preceding section.)*

Requirements for consideration for admission of Transfer Students:

1. Official transcripts must be mailed directly to the Office of Undergraduate Admissions by each post-secondary institution an applicant has attended.

2. An official secondary school transcript.

3. A Confidential Statement from the last institution regularly attended.

Applicants for transfer admission must present a minimum academic average of *C*, based on *all* post-secondary courses attempted. Applicants for the programs in Engineering Technology, Nursing and the General Criminal Justice concentration within the Criminal Justice Program will find other conditions for admission and/or advanced standing in those programs described in the following paragraphs.

Engineering Technology

Technical institute graduates who wish to enter the engineering technology program at the University of North Carolina at Charlotte must meet the following requirements:

(1) Earn an Associate in Applied Science degree, or its equivalent, in a field appropriate to the option which the student plans to enter.

(2) Achieve an overall quality-point average of at least 2.2 (based on the 4.0 scale) on all courses taken at the technical institute. Exceptions to this requirement will be considered on the basis of individual merit.

(3) Complete satisfactorily the prerequisite background courses for the option which the student plans to enter.

Acceptance of the A.A.S. degree indicates the acceptance of 64 semester hours toward the Bachelor of Engineering Technology degree only. These hours become invalid when a student transfers to any other degree program.

Nursing

Registered nurses who are currently licensed to practice nursing and who meet University requirements for admission as freshmen or transfer students are considered for admission to the College of Nursing. Advanced standing in nursing will be awarded on the basis of achievement demonstrated by qualifying examinations administered after admission to the College of Nursing.

Criminal Justice

Graduates of two-year institutions who wish to enter the General concentration, which is one of the four concentrations offered in the Criminal Justice Program, must have earned an A.A.S. degree with a major in a criminal justice area.

Upon acceptance of the A.A.S. degree, the successful applicant is granted 64 semester hours which are valid only toward the General concentration.

Entrance Deficiencies

Applicants who are otherwise well-qualified may be offered admission even though they are lacking the prescribed entrance units in foreign languages or mathematics.

Since the University offers no remedial courses in mathematics, that type of deficiency should be removed during the summer prior to the student's freshman year. The necessary courses are frequently offered in the summer programs of secondary schools, community colleges and technical institutes.

Students lacking units in a foreign language are expected to remove that deficiency during the freshman year at the University.

All entrance deficiencies must be removed before registration for the third semester.

Admission to other than Freshman or Transfer status:

Auditors

Any student eligible for admission to the University may register as an *auditor* for any class in which space is available. The fees and procedures are the same as those for a credit enrollment.

The participation of auditors in class discussion and in tests or examinations is optional with the instructor. Auditors receive no University credit but they are expected to attend class regularly. Notation of an audited course on the student's permanent record is made, but no grade will be given.

The procedure for adding or dropping an audit course is the same as for credit enrollments.

Special Students

Special students are those who are not candidates for degrees and who do not file complete academic credentials. They may enroll in undergraduate courses at UNCC until they have attempted a total of 18 semester hours with grade evaluation, but regular degree students will have preference for a place in classes. They are expected to conform to the standards required of all students. After reaching the 18 hour limitation, special students must be reviewed and be acceptable for regular degree status before enrolling again at UNCC.

Special students who have done previous college work (including UNCC) must be eligible to return to the institution last attended.

The student must be 18 years of age or over and must understand at the time of his registration that the work completed in special student status will be evaluated in terms of major department and degree requirements only after the student's formal admission to a degree program.

Enrollment of Senior Citizens

Residents of North Carolina who have attained the age of 65 and who meet applicable admission standards may enroll tuition-free on a space-available basis. Senior citizens who enroll in the Creative Arts Department's offerings will be obligated to pay the special fees which are assessed all students who enroll in the department. Interested persons should contact the Office of Undergraduate Admissions.

Former Students

A student must make application for readmission to the University if he did not complete the last *regular* semester, fall or spring, prior to the semester or summer term for which he wishes to register. Applications should be filed at the Undergraduate

Admissions Office in accordance with the published application dates.

Readmissions decisions are based on a review of the student's complete University record, with major emphasis given to the academic history and the probability for success in the major department and in terms of the general degree requirements.

Admission of Transient Students (Visitors)

Students enrolled at other colleges and universities who have the written permission from their institutions to take specified courses at the University in a given semester term may be enrolled as transient students.

College Credit in Escrow Program

The Escrow Program provides an opportunity for highly qualified students to take college credit courses while enrolled in secondary school. Records of credit earned will be maintained for use at the University or at another institution of higher learning.

Applicants recommended for participation in the Program usually have shown great ability in particular academic areas. The recommendations are normally made through the office of the superintendent of the school district.

Requests for additional information and application blanks should be directed to the Office of Undergraduate Admissions at UNCC.

Second Baccalaureate Degree

Admission

Students who have earned baccalaureate degrees from UNCC or other accredited institutions must make application for admission to the second degree program by the admissions date published in the University calendar and be approved by the appropriate department chairman and college dean.

Requirements

1) The major field and degree must be different from the first and all requirements for both the major and the degree satisfied.

2) A minimum of 24 semester hours beyond those applied to the first degree.

3) A minimum of 2.00 Grade Point Average on all work attempted toward the second degree.

4) Students whose first degrees were from other institutions must also meet the UNCC residency requirements.

ADVANCED STANDING

A. *Advanced Placement Course Credit (APP)*

The departments of Biology, History and Mathematics have authorized University credit for students who present scores of 3, 4 or 5 on Advanced Placement Tests of the College Entrance Examination Board.

Students who present scores in other subject areas will be granted credit for test scores of 4 or 5.

B. *College Level Examination Program (CLEP)*

The General Examinations
A student may receive up to 32 semester hours of credit equivalent to the UNCC general degree requirements, with credit being awarded only for scores at the 50th percentile, or higher.

The Subject Matter Examinations
Credit may be awarded for subject matter examinations, except Medical Technology and Nursing, at the levels recommended in the current edition of *CLEP SCORES: Interpretation and Use.*

The amount of CLEP credit which is applicable to a specific degree program is determined by the respective departments.

C. *Transfer Credit from Other Institutions*

Transcripts are evaluated by examiners in the Office of Undergraduate Admissions and the results are provided to each applicant and to his major department. Determining the applicability of any transferred credits to major or program requirements is the responsibility of the department chairperson or program director. General rules governing transfer credit are:

1) No credit below *C* level will be accepted; quality points and averages do *not* transfer.

2) Courses in which credit is accepted must be appropriate for approved University programs and curricula.

3) A limited number of correspondence and/or extension courses may be transferred.

4) The University accepts a maximum of 64 semester hours from two-year institutions.

APPLICATION DATES

Due to the large number of applications the University is receiving and due to the rapid growth of this campus, the University

may be required to announce an earlier cutoff date for application. Unless such an announcement is made, applications may be submitted and completed according to the following schedule:

Term of Entry	*Application Must Be Filed By*	*Application Must Be Completed By*
First Summer Term	May 1	May 15
Second Summer Term	June 15	July 1
Fall Semester	July 1	July 15
Spring Semester	December 1	December 15
First Summer Term	May 1	May 15
Second Summer Term	June 15	July 1

The University may alter these application dates in accordance with available resources and the enrollment limitation established by the North Carolina General Assembly.

DEGREES OFFERED

DEGREES OFFERED

The following degrees are offered at the University of North Carolina at Charlotte:

Bachelor of Arts (B.A.)

With Majors in:

Afro-American and African Studies
Anthropology
Architecture
Biology
Business Administration
Chemistry
Earth Science
Economics
English
French
Geography
German
History
Human Development and Learning
Mathematics
Philosophy
Physics
Political Science
Psychology
Religious Studies
Sociology
Spanish

Bachelor of Architecture (B.Arch.) (5-year program)

Bachelor of Science (B.S.)

With Majors in:

Accounting
Biology
Chemistry
Criminal Justice
Mathematics
Nursing
Physics

Bachelor of Creative Arts (B.C.A.)

Art Dance Music Theater

Bachelor of Science in Engineering (B.S.E.)

With Options in:

Engineering Analysis and Design
Engineering Science, Mechanics, and Materials
Urban and Environmental Engineering

Bachelor of Engineering Technology (B.E.T.)

With Options in:

Civil Electrical Mechanical

Master of Arts
Geography
Mathematics
Master of Arts in Education
Fields
Master of Education
Master of Business Administration
Master of Science
Biology
Chemistry
Master of Urban Administration

GRADUATION WITH HONORS

Each of the undergraduate degrees except the B.C.A. (no grade point average computed) is awarded with high honor, when the graduate's quality point ratio is 3.80 or more, or with honor, when his quality point average is 3.40 or more but less than 3.80

To be eligible for degree honors, a student must attempt in residency at UNCC 48 hours used in computing the quality point average.

DEGREE REQUIREMENTS FOR BACHELOR OF ARTS AND BACHELOR OF SCIENCE

Course Requirements

The University of North Carolina at Charlotte has a minimum number of required courses to give the student maximum freedom in selection.

Following are the required courses:

Subject	*Semester Hours Required*
English	6
Option of Mathematics or Foreign Language***	6-8
Natural Science (One year of a laboratory science—biology, chemistry, Earth Science 101, 102, physics, or Psychology 101-101L. Psychology 101 may be offered as a natural science or as a social science but not as both.)	8
Social Science (To be selected from economics, Anthropology, Geography, Criminal Justice, history, philosophy, political science, psychology, religious studies or sociology.) A course in philosophy or religious studies may be offered as a humanity or as a social science but not as both.)	6
Humanities (To be selected from courses in American Studies, literature, religious studies and philosophy. Courses in religious studies and philosophy may not fulfill both humanities and social sciences requirements.)	6
Total Number of Semester Hours Required for Graduation	120***

Note: For the number of hours in the major department, see the requirements of that department in the section entitled *Courses of Study.*

*A course in logic may be substituted for one course in mathematics. The rest of a student's course work is under the advisement of his department.

**Or proficiency in language equivalent to completion of the fourth semester.

***The Bachelor of Arts in Architecture requires 132 hours. The Bachelor of Architecture requires 164 hours.

Quality Point Requirements

In all courses attempted at the University, a minimum overall quality point average of 2.00 is required. In all courses in the major, a minimum quality point average of 2.00 is required.

Course Level Requirement

Junior and senior students are required to have the consent of their major department to enroll in any course below the 300 level not required in their degree program.

Residence Requirements

The minimum residence requirement for a Bachelor's Degree at the University of North Carolina at Charlotte is that a student must earn the last 30 semester hours of credit at the University. The last 12 semester hours of the work in his major field must be earned at the University. Exception to either of these hour provisions may be made upon the approval of the student's major department in consultation with the department offering the course or courses in question and with the approval of the dean of the college of the student's major.

Course work taken in residence shall be construed to mean work offered by the University of North Carolina at Charlotte and taken in course on the Charlotte campus.

REQUIREMENTS FOR THE BACHELOR OF CREATIVE ARTS DEGREE

To receive the Bachelor of Creative Arts degree, a student must have completed a minimum of eight semesters of work (or its equivalent) and meet the following stipulations:

1. The last two semesters must be completed in residence in the BCA program.

2. Under consultation with his major adviser, a student forms a graduation review committee, consisting of: his major professor, one other professor in his field, two professors outside his field, and two students from his advisee group.

3. The candidate's portfolio, manuscript or performance must be appraised by his major professor and two other professors from outside the candidate's field.

4. The student must have a recommendation by a review board of three students from his field.

FOREIGN LANGUAGE REQUIREMENTS

If a student elects the foreign language option, he is expected to achieve and demonstrate proficiency in a language other than

English. Proficiency must at least equal that obtained by successful completion of 202-level language courses.

A student who presents four high school units in the same foreign language will be presumed to have satisfied the foreign language option of the general degree requirements even though he receives no University credit in that language.

The student who presents two units in a given language for entrance and who, by placement test, is found capable of enrolling in the 201 course in the same language, can satisfy the general degree requirement by successfully completing the 201 and 202 courses in that language.

The student who, on the basis of placement results, is advised to repeat the elementary course will receive credit for doing so. He may also choose to take an elementary course in another foreign language for elective credit.

A student provisionally admitted without foreign language units must take two elementary language courses for which he receives elective credit.

A student transferring to the University of North Carolina at Charlotte with two or more years of college work in an ancient or modern language not taught at the University, with a grade of at least *C* in each course, will be deemed to have fulfilled his foreign language requirement, provided he has completed satisfactorily two years of high school foreign language.

Students transferring from other colleges will take language placement tests in the language they intend to continue at the University, and they will be advised to register for the course for which they are best fitted, according to their placement test scores, for best results in their language sequence. They may not, however, receive credit again for courses the equivalent of which have already been accepted for transfer credit.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE IN ENGINEERING

The minimum residence requirement for a Bachelor of Science in Engineering Degree at the University of North Carolina at Charlotte specifies that a student must earn the last 30 semester hours of credit at the University. The last 12 semester hours of the work in his major field must be earned at the University. Exception to either of these hour provisions may be made upon approval of the student's major department in consultation with the department offering the course or courses in question and with the approval of the dean of the College of Engineering.

Course work taken in residence shall be construed to mean course work offered by the University of North Carolina at Charlotte and taken on the Charlotte campus.

Course Requirements

English	3
Humanities and Social Studies Electives	15
Economics 201 or 202	3
Mathematics 105, 141, 142, 241, 271	15
Physics 101, 102, 222	11
Chemistry 101, 105	4
Science Elective	3
EGR 101A, B, C, 102A, B, C	6
ESM 241, 242, 311	9
Departmental Requirements*	42
Minor Option	15
Total Number of Semester Hours Required for Graduation	126

Quality Point Requirements

In all courses attempted at the University, a minimum overall quality point average of 2.00 is required.

In all courses attempted in the College of Engineering, a minimum quality point average of 2.00 is required.

Course Level Requirements

Junior and senior students must have the consent of the College of Engineering to enroll in any 100 or 200 courses not required in their degree program. The engineering electives, the humanities and social science electives, and the technical or humanities electives will ordinarily consist of sequences of related courses and are subject to the prior approval of the College.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ENGINEERING TECHNOLOGY

The residence requirement for the Bachelor of Engineering Technology degree at the University of North Carolina at Charlotte specifies that the last 30 semester hours of credit must be earned at UNCC and that the last 12 semester hours of work in the major field must be earned at this University.

Course Requirements

Prerequisite courses for entering the Engineering Technology program, normally taken at a technical institute or junior college, are listed on page 136.

In addition, the following UNCC courses are required for the B.E.T. degree:

*See the departmental section of the catalog for three specific requirements.

Title	*Sem. Hours*
Chemistry 101 (or other Natural Science)	3*
Computer Science (CSC) 100	3
Economics 201 or 202	3
Humanities or Social Science electives	12*
Free electives	3
Major electives	6*
Engineering Analysis	6*
Specified courses in major area of study (see p. 136)	28*
Total	64
Transfer credit for A.A.S. degree	64
Total number of semester hours required for B.E.T. degree	128

Quality Point Requirements

In all courses attempted at the University, a minimum overall quality point average of 2.00 is required.

In all courses attempted in the College of Engineering, a minimum quality point average of 2.00 is required.

SECOND BACCALAUREATE DEGREE (See page 37.)

HONORS PROGRAM

The purpose of honors programs at the University of North Carolina at Charlotte shall be to identify the creative, imaginative, and/or exceptional student, and to encourage and recognize the development of this student's potential.

Honors work will emphasize independent study. Honors work may be undertaken as early as the first semester of the freshman year. To qualify for graduation with honors recognition, the student must be admitted formally to honors candidacy by the University Honors Council at least two semesters before graduation.

To qualify for graduation with honors recognition, the student must present a total of at least six hours of upper division honors work, undertaken during no fewer than two semesters, with grades of *Pass Honors (HH).* Three of these hours must be devoted to research leading to the production of an acceptable honors thesis or its equivalent. The student may withdraw from honors courses without penalty and may withdraw at any time from the honors program without penalty. Credit shall be given towards graduation for any completed honors courses.

Non-candidates for honors recognition shall be permitted to enroll in and receive credit for honors courses.

*Differences exist for CET curriculum.

The grading system for honors courses shall be as follows:

Pass Honors (HH). The student shall receive the quality points equivalent to the letter grade *A*, and hours so passed shall be averaged into the student's overall grade point average.

Pass (HP). No honors credit or quality points shall be given, but the student shall receive course credits.

No Credit (NC). No course or grade credit or penalty shall be given.

The credit system for honors courses shall be identical to that used for all other undergraduate courses.

AFRO-AMERICAN AND AFRICAN STUDIES

Director: Frank Porter Graham Associate Professor Maxwell

The director facilitates the implementation of the program which will enable the University's Black students to come to an awareness of who they are, where they come from, where they are going and why.

PROGRAM FOR INTERNATIONAL STUDIES

Director: Earl L. Backman
Foreign Student Advisor: Marian Beane

The Program for International Studies, by offering a concentration, allows students to pursue an interdisciplinary and comparative study of foreign cultures and societies while they fulfill the academic requirements for a major in one of the approved University degree programs.

A concentration in international studies permits a wide variety of choice in subject matter and encourages course work in modern foreign languages, humanities, social sciences and international economics and business. Carefully selected programs should be designed to provide students with cultural and intellectual enrichment for more rewarding lives in an increasingly interdependent world. Such programs should also be of particular value to those with career objectives in government, business, trade, finance, law, health and environmental programs, international agencies such as the United Nations, private religious and humanitarian service organizations, journalism, teaching, research and military service.

Students seeking a concentration in international studies must fulfill general University degree requirements and requirements for a selected major, In addition, students are expected to complete a minimum of eight courses in at least three departments outside their major.

A program of study fulfilling this option may be viewed from a variety of perspectives: topically, e.g. world population, poverty, violence, and war and peace futures; or geographically, e.g. Soviet Union, Eastern Europe, Africa, Asia and Latin America; or chronologically, e.g.ancient, medieval and modern. Students majoring in the following disciplines may earn a concentration in international studies.

Accounting
Anthropology
Architecture
Biology
Business Administration
Chemistry
Criminal Justice
Earth Science
Economics
Engineering Analysis and Design
Engineering Science, Mechanics and Materials
Engineering Technology
English
French
Geography
German
History
Human Development and Learning
Mathematics
Nursing
Philosophy
Physics
Political Science
Psychology
Religious Studies
Sociology
Spanish
Urban and Environmental Engineering

Creative ideas and leadership for the academic program are provided by the director and the International Studies Advisory Committee of faculty, students and staff representing the various cooperating departments. The International Studies Program also coordinates a variety of activities, events, travel options and other opportunities of international scope in order that students may participate in a broad range of experiences.

Students seeking certification in international studies shall plan programs with department advisers and the director of International Studies. The director will assist in the planning of a concentration, and review and approve all certification in International Studies. Transcripts of students satisfactorily completing their program will bear the statement, "Concentration in International Studies." To meet the requirements for the concentration, a student also must have at least a 2.0 average in the courses offered for it.

Lists of courses approved for credit toward a concentration in International Studies are available in the departments listed above or from the program director.

PREPARATION FOR PROFESSIONAL SCHOOLS

Students may begin preparation at the University of North Carolina at Charlotte for a number of professional careers. Depending upon the professional school's requirements, the student may wish to take a degree at the University of North Carolina at Charlotte or to transfer after one, two or three years.

Preparation for the following programs is offered: Chemical Engineering, Dentistry, Journalism, Law, Medical Technology, Medicine, Optometry, Pharmacy and Social Work.

The student who plans to enter a professional school is advised to plan his program so that general requirements for the Bachelor of Arts or Bachelor of Science degree are met in addition to the requirements for the professional program being considered. The student planning to attend a professional school should inform his adviser of his plans. The student should become familiar with the requirements of the school which he plans to attend.

Chemical Engineering

Students seeking a program in chemical engineering should consult the Department of Chemistry or the Department of Engineering Science, Mechanics and Materials for advice concerning available options. However, those students desiring to obtain the Bachelor of Science in Chemical Engineering degree may do so by transferring to North Carolina State University after spending two years at the University of North Carolina at Charlotte. To be eligible for such transfer, the student must meet the admissions requirements for transfer at North Carolina State University. Normally, after transfer an additional two to two and one half years will be required for the degree.

The following courses are ones which most closely resemble courses suggested for Chemical Engineering students at North Carolina State University.

First Year:

Chemistry 101, 101L, 102, 102L
Engineering 101 BC, 102 ABC
English 102
Mathematics 105, 141, 142
Physical Education (2 semesters)
*Social Science and Humanities (2 semesters)

Second Year:

Chemistry 231, 231L, 232, 232L
Engineering Analysis & Design 268
Mathematics 241, 271
Physical Education (2 semesters)
Physics 221, 231, 251, 252
*Social Science and Humanities (1 semester)

The above represents a joint arrangement worked out by the Department of Chemical Engineering at North Carolina State

*A one semester course in each of the following areas is required: History, Economics, English Literature.

University with the Department of Chemistry and the College of Engineering at the University of North Carolina at Charlotte. Students may enroll in either the College of Engineering or the College of Science and Mathematics to pursue such a program.

Dentistry and Medicine

The composite requirements for entrance to most medical and dental schools in North Carolina, South Carolina, Georgia, Tennessee and Virginia are as follows:

Biology	8 hours
Inorganic Chemistry	8 hours
Organic Chemistry	8 hours
Quantitative Analysis	4 hours
(Required by half the schools surveyed)	
Physics	8 hours
English	12 hours
Foreign Language	9-12 hours
(North and South Carolina only)	

Journalism

A number of institutions accept graduate students in journalism with the background of a liberal arts degree. Other institutions accept students transferring to an undergraduate program at the junior year with a liberal arts background.

Law

The University suggests that the student planning to enter law school have an understanding of the value of English literature and composition, American history, psychology, logic and ethics, political sciences, economics, government, accounting, mathematics, sociology, Latin and modern languages, and Criminal Justice. Preparation should include comprehension and expression in words, critical understanding of human institutions and values, and creative power in thinking. Thus, any of several majors with wisely selected electives might provide the broad educational background needed.

Medical Technology

The University, through affiliation with several schools of medical technology, offers programs leading to baccalaureate degrees in biology and chemistry, with training in medical technology. Students interested in this four-year program are advised to check the more detailed listing under the individual departments and to consult with the appropriate adviser in the Department of Biology or Chemistry.

Optometry

Schools of optometry require a minimum of two years undergraduate study similar to the two-year program listed for

pharmacy below. Advising for students interested in pre-optometry preparation is available in the Department of Physics.

Pharmacy

Students planning to seek a Bachelor of Science in Pharmacy degree may spend either one or two years at the University of North Carolina at Charlotte. One year is recommended for students transferring to a four-year pharmacy school such as the University of North Carolina at Chapel Hill; two years is recommended for students transferring to a three year pharmacy school.

For the student planning to spend one year at the University of North Carolina at Charlotte, the following courses are required:

English 101, 102
Social Science (2 semesters)
Biology 101, 205, 205A; or 221, 345
Mathematics 120 or 141
Mathematics Option 142 or 221
Chemistry 101, 101L, 102, 102L
Physical Education (2 semesters)

For the student planning to spend two years on the Charlotte campus, the following additional courses are required:

Humanities (1 semester)
Economics 201
Physics 101, 102
Chemistry 231, 232
Electives (6 hours)

The Pharmacy School at the University of North Carolina at Chapel Hill requires no additional foreign language other than required for admission to the general college.

Social Work

For the student planning a career in social work, a major either in psychology or sociology with related work in social work is recommended. Whichever major is chosen, the student should complete the courses required for a social work concentration and select a variety of courses pertaining to human development as well as the social, cultural, political and economic contexts of living.

GRADUATE STUDIES

Master's Degree Programs

The University of North Carolina at Charlotte currently offers eight graduate degrees; of these, two, the Master of Arts in Education and the Master of Education, are directed primarily to in-service public school teachers in the Metrolina area. A third, the Master of Business Administration, is designed to meet the needs of persons currently employed by business, financial, or manufacturing institutions within commuting distance of our campus. The Master of Urban Administration is directed toward public administrators with emphasis on the management of local government. The Master of Arts in Geography seeks to prepare profes-

sionals in planning, locational analysis, teaching and similar areas of interest. The Master of Arts in Mathematics is directed toward industrial and governmental workers and toward the preparation of junior and community colleges teachers. The Master of Science in Biology and the Master of Science in Chemistry are both awarded on the basis of research programs emphasizing breadth of training in their respective fields.

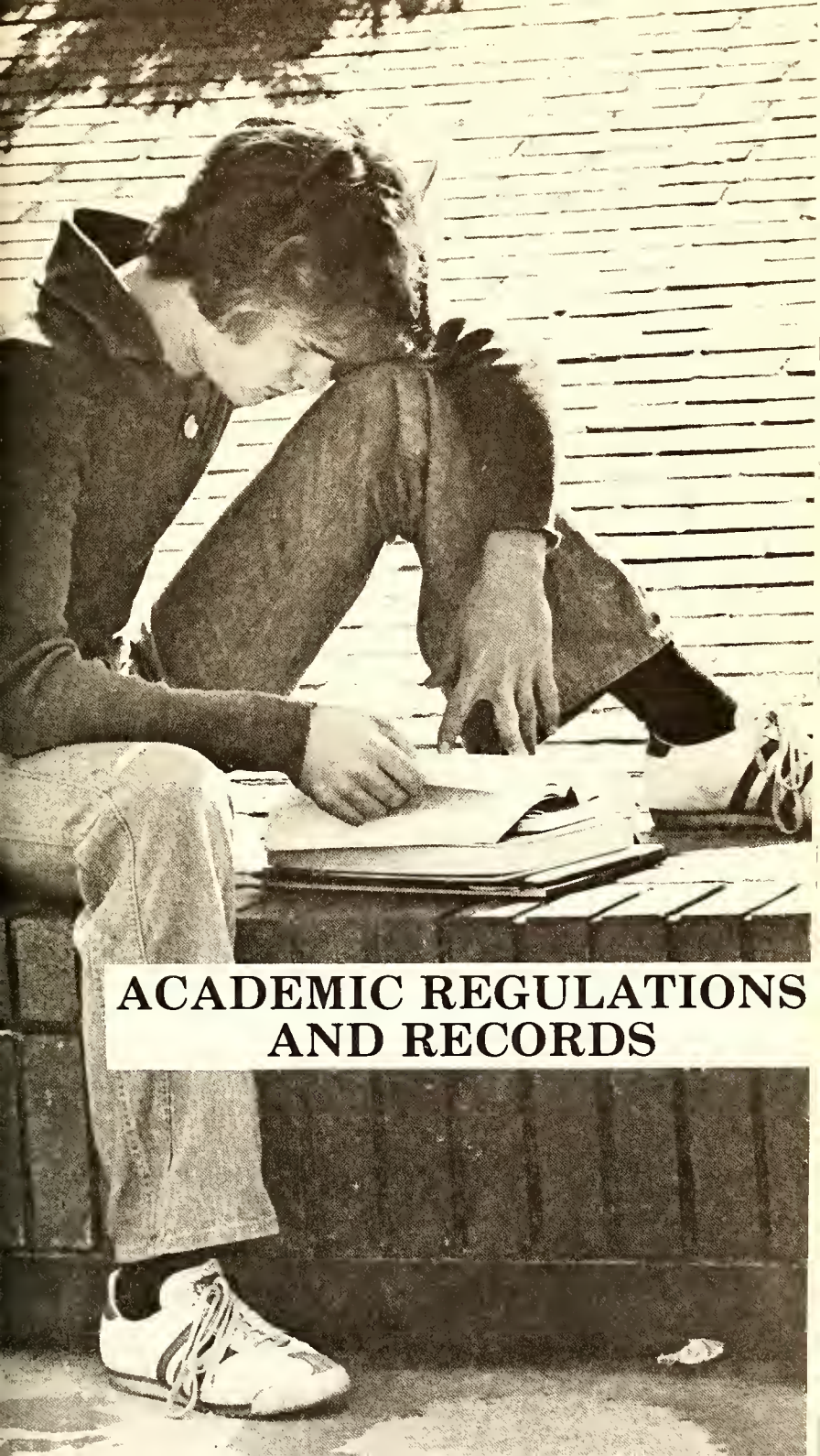
Admissions

For admission to graduate study at the University of North Carolina at Charlotte, application must be made on a form supplied by the Director of Graduate Studies and accompanied by the specified application fee, scores on the Aptitude Portion of the Graduate Record Examination or the Miller Analogies Test (for all programs except the Master of Business Administration and the Master of Arts in Mathematics); three recommendations, an essay describing previous experience and objective in undertaking graduate study, and scores on the Graduate Management Admission Test are required with the application for the Master of Business Administration. Applicants for the Master of Science in Biology may be admitted on the basis of the Aptitude Portion of the Graduate Record Examination or Miller Analogies Test, but will be required to take the Advanced Graduate Record Examination in field during the first semester in residence. Applicants for the Master of Arts in Education in Mathematics must also furnish scores on the Doppelt Test of Mathematical Reasoning if the Miller Analogies Test is offered in lieu of the Aptitude Portion of the Graduate Record Examination. The Master of Arts in Mathematics requires the submission of scores on the Aptitude Portion of the Graduate Record Examination.

In general, an applicant is expected to have an overall quality point average of 2.5 (on a 4.0 scale) on all work attempted beyond the high school, with an average of 3.0 or better on the major or basic courses prerequisite to the area of proposed graduate study. Applicants for admission to programs leading to the Master of Arts in Education or the Master of Education will normally possess a valid North Carolina Class "A" teacher's certificate or be approved in advance.

The minimum number of semester hours required varies from thirty to thirty-six depending on the degree sought. Additional course work may be required in any program to remedy deficiencies in preparation or to meet specific professional objectives. At least half of the work offered for the degree must be selected from courses open only to graduate students; the other half may be taken from courses open to advanced undergraduates or graduates.

For detailed information concerning the admissions and degree requirements specific to each program consult the current *Graduate Catalog* or contact the director of Graduate Studies.



ACADEMIC REGULATIONS AND RECORDS

*Grading—Undergraduate**

The unit of measurement of University work is the semester hour. It ordinarily represents one lecture hour per week for one semester; however, a sequence of two or three laboratory hours is considered to be the equivalent of one lecture hour.

Letters are used to indicate the quality of work done. Each letter carries a quality point value for each semester hour of work attempted. The meaning of each letter with its accompanying quality point factor is:

Letter	*Description*	*Quality Point Per Semester Hour*
A	Excellent	4
B	Good	3
C	Fair	2
D	Passing	1
F	Failing	0
I	Incomplete	**
W	Withdrawal	**
AU	Audit	**
	Pass/No Credit	
H	Honors	**
P	Passing	**
N	No Credit	**
	Honors	
HH	High Honors	4
HP	Honors Passing	**
N	No Credit	**
	Creative Arts	
	(No grade point average is computed.)	
P	Progressing	
S	Satisfactory	
U	Unsatisfactory	

Grade of I

The Grade of *I* is assigned at the discretion of the instructor when a student who is otherwise passing has not completed all the work in the course. The missing work must be completed during the next semester in residence or within one calendar year after the end of the term in which the *I* was assigned, *whichever comes first.* If the *I* is

*For explanation of grading in the Bachelor of Creative Arts degree program, see page 187. For explanation of grading in the college of engineering, see pages 109-110.
**Not used in computation of gradepoint averages.

not removed during the specified time, a grade of *F* is automatically assigned the grade of *I cannot* be removed by reenrolling in the same course.

*Grade of W**

No grade will be given for a course dropped on or before the last day to drop courses without grade evaluation. When a student withdraws from a course after the date, as indicated on the Academic Calendar, but before the end of a semester, and if in the opinion of his instructor he is passing at the time of withdrawal, he will receive the grade of *W*. Courses given the grade of *W* do not count as hours attempted. The time of withdrawal is the time the drop card is accepted by the Registrar's Office.

Quality Point Ratio

A student's quality point ratio at the University of North Carolina at Charlotte is determined by multiplying the number of quality points for each grade by the number of hours received in that course and adding all accumulated quality points together, then dividing by the total number of hours the student has attempted, except those for which the student has received a grade of *W, I,* or *U*. In computing the quality point ratio, only those credits attempted at the campus of the University of North Carolina at Charlotte are included.

The quality point ratio for students enrolled in the College of Engineering is calculated somewhat differently. When a course is repeated, no additional hours attempted accrue, and the quality points of the previous grade are replaced by those of the current grade.

Grading—Graduate

A different grading system is employed in reporting performance in graduate studies. The system of grades which is authorized for graduate credit enrollment is published in the *Graduate Catalog*.

Grade Reports

A report of final grades is mailed to each student at the close of each term unless a student requests, in writing, that his copy be mailed directly to a parent or guardian.

Parents and students are urged to confer with one another and arrive at a mutual understanding of the person and address to whom the grade reports are to be sent.

Special reports of unsatisfactory achievement are sent to the students concerned near the middle of each regular semester.

*College of Engineering regulations differ.

Transcripts of Records

Upon written request by the student, an official transcript of his academic record will be issued to the person or institution designated, provided that all the student's obligations to the University have been settled satisfactorily.

Each student is entitled to one transcript without cost, regardless of how early in his academic career the request may be made. A fee of $1 per copy should accompany subsequent requests.

Requests should reach the Registrar's Office at least one week before the date the transcript is needed.

Registration For Credit

Registration in any course is limited to the first week of a semester and the first three days of classes of a summer term. No credit will be given to a student for a course unless he is properly registered for it.

Assignment of Academic Advisers

Each student entering the University of North Carolina at Charlotte is assigned an adviser. Usually the adviser will be in the major field chosen by the student. Advisers are also supplied for those students who have not chosen a major field.

Changing of Degree and Major

A student may change degree or major objectives by filing an approved *Declaration of Program* at the Registrar's Office.

Course Load

A load of 15 semester hours constitutes a normal full semester program, but a student may register for less work. Any undergraduate student carrying 12 or more semester hours will be considered a full-time student by the University. A full load for graduate students consists of nine semester hours.

Course load is dependent on two factors: the scholastic ability of the student as reflected by his scholastic record, and available study time. It is suggested that a student whose part-time employment totals 20 hours a week should not carry more than 10 semester hours. A student working 40 hours a week should not carry more than seven semester hours.

*Adding or Dropping a Course**

In order to add or drop a course after the registration period, a student must secure written permission from his adviser and

*College of Engineering regulations differ

complete the necessary procedure as prescribed by the Registrar's Office. No students will be permitted to add a course or change sections of a course after the first week of a semester or the first three days of classes in a summer term.

A student who withdraws from a course after the last day to drop courses without grade evaluation will receive a grade of *W* if, in the opinion of his instructor, he is passing at the time of withdrawal, and will receive a grade of *F* if, in the opinion of his instructor, the student is failing the course at the time of withdrawal.

Withdrawal

Any student voluntarily leaving the University before the close of the term must withdraw officially. He initiates the withdrawal procedure at his major department and files the completed form at the Registrar's Office. A student who is unable to appear in person may notify the Registrar's Office of his withdrawal by a letter. (See Former Students, page 36-37.)

Any person who leaves the University before the close of a term without withdrawing officially will receive a grade of *F* in all courses for which he is registered.

Transient Study

Course work undertaken by UNCC students at other accredited institutions may be transferred to the University, subject to the following regulations:

1. The University is not obligated to accept any credit from another institution unless the student has obtained the prior approval of the dean of the college in which he is enrolled. A Permit for Transient Study form should be completed and filed in the Registrar's Office.

2. No credit below *C* level will be accepted; no quality points transfer.

3. A limited number of correspondence and/or extension courses may be transferred.

Credit By Examination

A student currently enrolled at UNCC may pass a specially prepared examination and receive credit for a University course without having to do the normal course work. The examination will be designated by the appropriate department and will be administered either by the department or the Counseling Center. A receipt of payment of the examination fee (see p. 71) must be presented before taking the examination. Credit by examination will carry no quality points, and failures on such an examination will incur no quality-point penalty. A department may allow a student to take examinations for courses not then offered on the Charlotte campus, if it deems it appropriate to do so.

Challenge examinations in nursing courses are open to any student who is currently enrolled in the College of Nursing and who has had previous formal instruction in the subject area content for which he wishes to challenge for credit. Equivalency credit for nursing courses will be determined on the basis of written validation examinations in each clinical nursing course, and the applicant will be given credit only for those courses in which he attains a grade of C or better on the challenge examination. No challenge examination may be repeated. If an attempt at challenge is unsuccessful, the student will be required to enroll in the course for both theory and clinical laboratory experience. *No student may challenge a course for which he has already received a passing or failing grade at UNCC.*

Pass-No Credit Option

Every student will be permitted during his four undergraduate years to select a total of four courses in which he shall receive an evaluation of *H(honors), P(pass)* or *NC (no credit).* Only one such course will be selected during an academic year. Every course in the University is offered on this basis except when taken by a student for departmental credit toward his major or to satisfy all University degree requirements. Although units completed with *honors* or *pass* will count toward graduation, they will not be reckoned as part of the grade-point average.

This option is designed to encourage curiosity, exploration and experimentation in areas where a student has strong interests but little or no previous experience.

The student must declare his intention to take a Pass-No Credit option by the end of the add period in the semester.

Attendance

The instructional work of the University is designed for class attendance, and it is assumed that students will be present. Students who miss classes will be responsible for the work of those periods. A missed test may cost the student the advantage of a grade to be counted toward the final estimate since instructors are not required to give make-up tests.

No student may expect full credit unless he has attended at least 75 percent of the total class hours.

Classification of Students

At the beginning of the fall semester regular, students working toward a bachelor's degree are classified on the basis of minimum earned semester hours as follows:

Classification	*Earned Semester Hours*
Freshman	1-23
Sophomore	24-51
Junior	52-89
Senior	90 or more

Requirements for Continued Enrollment

As a general rule, each student will be allowed to remain at the University of North Carolina at Charlotte for the first two semesters following his first enrollment or until 30 semester hours have been attempted at the University of North Carolina at Charlotte, whichever happens last.

As a general rule, the summer sessions at the University of North Carolina at Charlotte shall be open to all students previously enrolled, including students academically ineligible to continue during the regular academic year.

The following table will serve as a guide to help the student determine his eligibility to continue.

Hours of Credit Earned, Including Transfer Credit:	*Minimum Grade Point Average to Continue*
0-29	1.10
30-59	1.30
60-89	1.60
90-109	1.80
110-and over	1.90

After the student has earned 60 semester hours, he is expected to make at least a 2.0 quality point ratio for each semester.

No student will be suspended from the University of North Carolina at Charlotte at the end of any semester for which his quality point ratio is at least 2.20.

A student's quality point ratio is determined on the basis of the hours he has attempted at the University of North Carolina at Charlotte. However, the grade of *F* on the same course will not count against the student more than once.

Requirements for Progression in Nursing Program

In order to promote the progression of safe practitioners from one level to the next within the College of Nursing and eventually into the nursing profession, students:

1. must achieve a minimum grade of *C* in *each nursing course.*

a. Course grades reflect combined theoretical and clinical performance, neither component of which must be less than *C*.

b. Only 4 hours of *D* credit in a natural science is acceptable for credit by the College of Nursing.

2. may not repeat a nursing course more than once. If a student repeats a nursing course and does not achieve a minimum of *C*, she will be asked to withdraw from the College of Nursing.

3. may not progress to the next level in the nursing curriculum until the pre-requisite nursing courses have been completed.

4. may not attempt junior level nursing courses until Sociology 151, a Sociology or anthropology elective, Psychology 101, Biology 101, 203, 205 and Chemistry 103 and 104 and sophomore level nursing courses have been completed and a 2. QPR has been earned, overall as well as a 2.0 QPR in the Nursing major.

5. may not attempt senior level nursing courses until all junior level nursing courses have been completed, including Psychology 307 and a 2.0 QPR has been earned, overall, as well as a 2.0 QPR in the Nursing major.

6. A student must achieve a 2.0 QPR in the nursing major to graduate.

7. Student may receive *I* in accordance with policy stated in UNCC catalog when confronted with personal or family crises.

Academic Regulations for College of Engineering Majors

The academic regulations governing quality point ratio for majors in the College of Engineering are different. Refer to pages 109 through 111 for these regulations.

Requirements for Removal of Academic Suspension

No student under suspension will be readmitted to the University if he does not completely satisfy the entrance requirements as stated elsewhere in this *Catalog*.

In addition, a student who has been suspended by reason of failure to satisfy the requirements for continued enrollment as stated above will be ineligible for readmission until the expiration of the next semester following his suspension (except that he will be permitted to enroll in the Summer Session) or until he meets the requirements for continued enrollment. If readmitted, he will be expected to satisfy the requirements for continued enrollment.

At the end of the semester in which the student fails to meet the requirements for continued enrollment for the second time, he will be suspended and may be readmitted only after meeting the requirements for continued enrollment.

The student has recourse for meeting the requirements for readmission by attending summer sessions at UNCC.

NOTE: Readmission after suspension or after an incomplete semester, whether caused by withdrawal or suspension, is not automatic. A new application must be made and approval to return must be received. Included in the approval must be an acceptance from the department in which the student would carry his major. See pages 36-37 *(Admission of Former Students.)*

Application for the Degree

Each student should make application for his degree on a form obtained from the Registrar's Office no later than the filing date specified in the University calendar. The application must be accompanied by the appropriate filing fee in effect at the time of the application. Degrees are awarded at Commencement exercises held at the end of the spring semester; however, the diploma will reflect the term in which all requirements were completed.

Student Responsibility

Every student is responsible for the proper completion of his academic program, for familiarity with the University *Catalog*, for maintaining the grade average required, and for meeting all other degree requirements, including attendance at the commencement exercises at which he will receive his diploma. His adviser will counsel him, but the final responsibility remains that of the student.

A student is required to have knowledge of and observe all regulations pertaining to campus life and student deportment. He is responsible for maintaining communication with the University, by keeping on file with the Registrar's Office at all times his current address, including ZIP Code, and telephone number.

Every student, while he is associate with the University, is expected to comport himself in campus and community life in a manner that will reflect credit upon himself and the University.

FINANCIAL INFORMATION

University Statement on Residency Status for TUITION Payment

Quotation verbatim of the current North Carolina law on this subject:

Article 14.

General Provisions as to Tuition and Fees in Certain State Institutions.

§ 116-143.1. Provisions for determining resident status for tuition purposes. — (a) As defined under this section:

(1) A "legal resident" or "resident" is a person who qualifies as a domiciliary of North Carolina; a "nonresident" is a person who does not qualify as a domiciliary of North Carolina.

(2) A "resident for tuition purposes" is a person who qualifies for the in-State tuition rate; a "nonresident for tuition purposes" is a person who does not qualify for the in-State tuition rate.

(3) "Iinstitution of higher education" means any of the constituent institutions of the University of North Carolina and the community colleges and technical institutes under the jurisdiction of the North Carolina State Board of Education.

(b) To qualify as a resident for tuition purposes, a person must have established legal residence (domicile) in North Carolina and maintained that legal residence for at least 12 months immediately prior to his or her classification as a resident for tuition purposes. Every applicant for admission shall be required to make a statement as to his length of residence in the State.

(c) To be eligible for classification as a resident for tuition purposes, a person must establish that his or her presence in the State currently is, and during the requisite 12-month qualifying period was, for purposes of maintaining a bona fide domicile rather than of maintaining a mere temporary residence or abode incident to enrollment in an institution of higher education.

(d) An individual shall not be classified as a resident for tuition purposes and, thus, not rendered eligible to receive the in-State tuition rate, until he or she has provided such evidence related to legal residence and its duration as may be required by officials of the institution of higher education from which the individual seeks the in-State tuition rate.

(e) When an individual presents evidence that the individual has living parent(s) or court-appointed guardian of the person, the legal residence of such parent(s) or guardian shall be prima facie evidence of the individual's legal residence, which may be reinforced or rebutted relative to the age and general circumstances of the individual by the other evidence of legal residence required of or presented by the individual; provided, that the legal residence of an individual whose parents are domiciled outside this State shall not

be prima facie evidence of the individual's legal residence if the individual has lived in this State the five consecutive years prior to enrolling or reregistering at the institution of higher education at which resident status for tuition purposes is sought.

(f) In making domiciliary determinations related to the classification of persons as residents or nonresidents for tuition purposes, the domicile of a married person, irrespective of sex, shall be determined, as in the case of an unmarried person, by reference to all relevant evidence of domiciliary intent. For purposes of this section:

(1) No person shall be precluded solely by reason of marriage to a person domiciled outside North Carolina from establishing or maintaining legal residence in North Carolina and subsequently qualifying or continuing to qualify as a resident for tuition purposes;

(2) No person shall be deemed solely by reason of marriage to a person domiciled in North Carolina to have established or maintained a legal residence in North Carolina and subsequently to have qualified or continued to qualify as a resident for tuition purposes;

(3) In determining the domicile of a married person, irrespective of sex, the fact of marriage and the place of domicile of his or her spouse shall be deemed relevant evidence to be considered in ascertaining domiciliary intent.

(g) Any nonresident person, irrespective of sex, who marries a legal resident of this State or marries one who later becomes a legal resident, may, upon becoming a legal resident of this State, accede to the benefit of the spouse's immediately precedent duration as a legal resident for purposes of satisfying the 12-month durational requirement of this section.

(h) No person shall lose his or her resident status for tuition purposes solely by reason of serving in the armed forces outside this State.

(i) A person who, having acquired bona fide legal residence in North Carolina has been classified as a resident for tuition purposes but who, while enrolled in a State institution of higher education, loses North Carolina legal residence shall continue to enjoy the in-State tuition rate for a statutory grace period. This grace period shall be measured from the date on which the culminating circumstances arose that caused loss of legal residence and shall continue for 12 months; provided, that a resident's marriage to a person domiciled outside of North Carolina shall not be deemed a culminating circumstance even when said resident's spouse continues to be domiciled outside of North Carolina; and provided, further, that if the 12-month period ends during a semester or academic term in which such a former resident is enrolled at a State institution of higher education, such grace period shall extend, in addition, to the end of that semester or academic term. (1971, c. 845, ss. 7-9; 1973, cc. 710, 1364, 1377; 1975, c. 436.)

Editor's Note. —
The 1975 amendment rewrote this section.

Tuition and fees

Charges for tuition and fees vary according to the student's status as a resident or nonresident of North Carolina. A nonresident student must pay a higher rate of tuition than a legal resident.

Tuition and fees are due and payable on the day of registration. Checks and money orders should be made payable to the University of North Carolina at Charlotte.

Students taking eight or more semester hours of work during a regular semester will be charged full tuition and fees. Students taking fewer than eight hours of work during a regular semester will be charged a prorated portion of tuition and fees as specified below. The charges which follow reflect the tuition and fees for the 1977-78 academic year.

Cost Per Semester For Eight or More Semester Hours	**Commuting Students*	*No. Carolina Resident Students*	*Out-of-State Resident Students*
Tuition	$120.00	$120.00	$ 950.00
General Fee	111.00	111.00	111.00
**Room and Board		512.50	512.50
Total	$231.00	$743.50	$1,573.50

Cost Per Semester For Five to Seven Semester Hours	**No. Carolina Students*	*Out-of-State Students*
Tuition	$ 62.50	$ 478.00
General Fee	40.50	40.50
Total	$103.00	$ 518.50

Cost Per Semester For Four or Fewer Semester Hours	**No. Carolina Students*	*Out-of-State Students*
Tuition	$ 31.50	$ 239.50
General Fee	17.00	17.00
Total	$ 48.50	$ 256.50

NOTE: Residence hall space is not available to students taking fewer than 12 semester hours.
All new full-time UNCC students (freshman or transfers) will be required to pay a one-time $7 orientation fee.
Tuition and fees listed here are subject to change.

*The commuting student will not have the cost of room and board but should estimate his cost of travel to and from the campus. Out-of-state commuting students should use the cost of tuition listed in the third column in computing their total expenses each semester.

**The listing for room and board given above is for the seven day plan. In addition, the University offers a five day room and board plan available at a cost of $487.50.

Additional Expenses

No extra fees are charged for laboratories as such. However, all degree students in the Creative Arts program are charged a flat fee of $45 per semester. All students enrolled in Directed Projects in the Department of Creative Arts are charged $25 per semester.

The estimated average cost of books and supplies per semester is $65. Beginning students in architecture and engineering should allow an additional expense of $60-$75 for drawing instruments, slide rule and supplies. Uniforms and supplies for nurses will cost approximately $100.

In addition to the above, the student should take into consideration the costs of clothing, snacks, recreation, laundry, etc. in planning his expenses for each semester.

The University reserves the right to make, with the approval of proper authorities, changes in tuition and fees at any time.

Housing

Admission to UNCC does not guarantee residence hall space. Arrangements for on-campus housing are made after admission with the Director of Residence Life. See the Correspondence Directory on the inside front cover for the proper address.

All housing applications for the full academic year must be submitted with a $50 pre-payment. This pre-payment is applied to spring semester room and board charges unless the student cancels his application for the spring semester by December 10, in which case, the $50 will be refunded. No refunds for fall semester reservations are made after July 1.

Application Fee

Applicants for admission are required to submit a $10 application fee with the application form. The fee is not deductible and is not refundable.

Late Registration Fee

A fee of $10 will be charged for those registering after the designated registration period each semester. *The fee is not refundable.*

Applicants completing their applications before the initial registration day but whose applications could not be processed in time will not be assessed the late registration fee if required to register late.

Graduation Fee

Each member of the graduating class must pay a graduation fee of $15 at the time he applies for the degree. This fee includes the cost of the diploma and the rental of the cap and gown. No reduction of the fee is allowed for those receiving degrees *in absentia*. For graduate students, the cost of renting a hood is in addition to the $15 charge.

Registration of Motor Vehicles

Any student attending the University is required to register his motor vehicle(s) in order to park such vehicle(s) on campus. Only vehicles owned by the student, his spouse, his parent(s), or his guardian may be registered. Unless increased by the chancellor, the number of vehicles which a student may register is two.

Registration of motor vehicles is to be accomplished as part of the University registration at the beginning of the fall semester of each year or at the time when the student first registers in the University and at the beginning of the fall semester of each year thereafter. A motor vehicle acquired by a student during a semester is to be registered.

Motor Vehicle Registration Fee

The motor vehicle registration fee for students, faculty and staff members is as follows:*

$20 per academic year beginning with the fall semester;
$12 for the period beginning with the spring semester and ending with the beginning of the next fall semester;
$ 8 for the period beginning with a summer term and ending with the beginning of the next fall semester;
$ 2 for one additional motor vehicle;
$ 1 for replacing lost or defaced permit.

Violators of University Parking Regulations will incur a civil penalty of $1.00, $3.00 or $5.00, depending on the seriousness of the violation. If not paid in five days, the penalty will be doubled and applied to the member's account with the University and collectable as a bad debt. Subsequent registration may be withheld for non-payment.

Temporary Parking Permits

Temporary parking permits are available for persons with cars registered on campus who are required to drive a non-registered car for a short period while the registered car is being repaired, for new employees prior to receipt of first pay check, and short-term visitors of resident students.

*Fees are subject to change.

Credit By Examination Fee

Fees for credit by examination are as follows: A written examination for a course will require a fee of $15. A laboratory examination requiring the arrangement of such things as laboratory materials will require a fee of $25. A combination of a laboratory and written examination will require a fee of $30.

Student Activities Fee

A part of the general fee provides students with a program of cultural, recreational and entertainment activities. It pays for admission to most athletic contests, dramatic productions, activities sponsored by the University Program Board, social and entertainment functions, and for subscriptions to the campus newspaper and literary magazine. The yearbook is provided free to all students taking eight or more semester hours of work each semester during the academic year. Other students may obtain a yearbook upon payment of $8.50.

Refunds

A student who officially withdraws from the University during the first two weeks of the semester will receive a refund of the full amount paid less a fee of $25.00. This applies to both full and part-time students. No requests will be approved after the end of the normal refund period unless the student can show undue hardship which caused him to withdraw from the University.

In the event a refund is approved as a result of hardship, the refund will be made pro-rata, based on the number of weeks between the beginning of the semester and the date the student officially withdrew from the University. Requests for a refund must be submitted in writing to the Chairman of the Refunds Committee.

In each summer session, a student who officially withdraws from the University during the first three class days will receive a refund of the full amount paid less a registration fee of $10. Under normal circumstances no refund will be made after the first three days of the summer session unless the student can show undue hardship which caused him to withdraw from the University.

Housing Refunds

The rental period is for the entire academic year (Fall and Spring semesters) continuing until the end of the Spring semester regardless of occupancy date after the Fall semester begins. Students may terminate at the end of the Fall semester with no penalty only by written notification to the Residence Life Office by December 10. The housing and dining agreement binds the student and/or guarantor to the full amount of charges for the academic year except as noted below:

a) Prior to July 1 for the Fall semester and December 10 for the Spring semester, an agreement can be cancelled and full

refunds made upon written notification to the Residence Life Office. If a student cancels after these dates, and up until the day prior to the published opening date of the residence halls for the appropriate semester, he/she will forfeit the $50 prepayment.

b) If cancellation is completed between the day prior to this published opening date of the residence halls and the end of the second week of classes for the semester, and another student contracts for that space, the student will be charged $50 in addition to forfeiture of the $50 housing prepayment. Also, dining charges will be made on a weekly pro-rata basis.

c) If cancellation is completed after the first two weeks of classes for the semester and another student contracts for that space, the student will be charged $50 for housing, in addition to forfeiture of the $50 housing prepayment, plus pro-rata share of housing and dining based upon a weekly amount up through week of cancellation or check-out.

d) If a student cancels on or after the day prior to the published opening date of the residence halls and *no other student contracts for that space,* he/she will be held responsible for the full semester's debt service charges for housing and dining ($100) plus forfeiture of $50 prepayment and any weekly pro-rata charges for housing and dining up through the week of cancellation or check-out.

Education For The Vocationally Handicapped

Students who have suffered a disability which renders them vocationally handicapped are eligible for aid provided by the North Carolina State Division of Vocational Rehabilitation. This aid takes the form of services which include vocational counseling and guidance and placement. Payment of expenses such as training, medical treatment, room and board, books, fees and tuition may be available. A vocational rehabilitation officer is available in Charlotte for interviewing applicants. Appointments may be made by contacting the Vocational Rehabilitation Office located at 219 East Boulevard, 375-8686.

Veterans Benefits

The Office of the Registrar works with the Veterans Administration to assist in administering the various programs of benefit to veterans or eligible relatives of veterans. The veterans clerk in the Registrar's Office certifies enrollment and transmits necessary credentials and information to the proper Veterans Administrative Office.

Admission to the University should be obtained before the student makes application for veteran's benefits. Application for a Certificate of Eligibility should be made to the nearest Veterans

Administration Regional Office at least six weeks before the expected date of enrollment.

In order to be eligible for the full monthly allowance under any of the above laws, an undergraduate student must be enrolled for 12 or more semester hours of work, while a graduate student must be enrolled for nine or more semester hours. Those enrolled for fewer semester hours than the limits stated above will be eligible for part-time compensation. Students are responsible for reporting any change in enrollment status to the veterans clerk in the Office of the Registrar.

Children of Veterans

The North Carolina Department of Veterans Affairs awards scholarships for the children of certain deceased or disabled veterans. Those awarded "full" scholarships are entitled to tuition, mandatory fees, board allowance and room allowance; those awarded "limited" scholarships are entitled to tuition and mandatory fees. All inquiries should be referred to the North Carolina Department of Veteran Affairs, P.O. Box 26206, Raleigh, North Carolina 27611, telephone, Raleigh 829-3851.

Before the time of registration each eligible student who wishes to enter the University should:

1. Make application for admission following University procedures.

2. Make application for scholarship award to the North Carolina Department of Veterans Affairs.

Financial Aid

Financial assistance is available to University undergraduate students in several forms: scholarships, grants-in-aid, loans and part-time employment. The University makes every effort within the limits of its available resources to encourage and assist students with seriousness of purpose to obtain a University education. A financial problem should not deter a student from submitting an application for admission.

How to Apply

To be considered for financial aid at the University of North Carolina at Charlotte, a student must have on file a University application for financial aid, a Confidential Financial Statement, and be accepted for admission to the University. The University application for financial aid may be obtained from the Student Aid Office. A Confidential Financial Statement is available through the guidance counselors of all high schools or from the Student Aid Office of the University. The University of North Carolina at Charlotte participates in the College Scholarship Service of the

College Entrance Examination Board. Together with other participants in CSS, the University subscribes to the principle that the amount of financial aid granted a student should be based upon financial need. The CSS assists colleges and universities and other agencies in determining the student's need for financial assistance. All students seeking financial assistance are required to submit a copy of the Financial Aid Form to the College Scholarship Service, designating the University of North Carolina at Charlotte as one of the recipients. The institutional application and the Financial Aid Form should be submitted prior to April 1 in order to assure that they can be processed in time for an award to be made before fall registration. Any student submitting the required forms will be automatically considered for all types of financial aid which are available through the University. The University also accepts the Family Financial Statement from the American College Testing Program.

The University seeks to assign the kind of aid best suited to the needs and qualifications of the student. In general, the awards are approved and announced proportionate to the demonstrated need of the student and his satisfactory record of achievement and school citizenship. All students will be given consideration regardless of race, creed, color or national origin.

Renewal of Financial Aid

Renewal of financial aid is based upon a student's making a clearly satisfactory record. After enrollment, the student must make application by April 1 for financial aid in the next year. The Financial Aid Form will be required each year that a student applies for financial aid.

Loans

The Emergency Loan Fund—Students may borrow up to $25 for 30 days. There is a $.25 service charge, but no interest is charged on the loan. Students may borrow up to $100 for 60 days at an interest rate of three percent per annum. The student who consistently borrows from this program will be expected to file an application for financial aid. Normally, tuition and fees are not considered an emergency.

The Marlin McCasland Memorial Emergency Loan Fund—This fund, established by friends of Marlin McCasland as a memorial, is for the purpose of making emergency loans up to $25 for 30 days. There is a $.25 service charge, but no interest is charged on the loan.

The Student Financial Services—This office, financed and operated by the Student Body Government, offers short-term loans and check cashing privileges.

Federal Insured Student Loans—Qualified applicants may borrow up to $2,500 per year for educational expenses. The interest rate throughout the life of the loan is seven per cent per annum,

simple interest. Borrowers whose adjusted family income is less than $15,000 are eligible for payment of the seven percent interest by the federal government during the in-school, grace and authorized extension periods. Repayment begins on a date between nine and 12 months after a student completes his course of study or leaves school. The maximum repayment period is 10 years, although minimum repayment requirements may reduce this. Deferment of repayment may be authorized for service in the military, Peace Corps or VISTA or for any period that a student returns to full-time study.

The North Carolina Student Incentive Grant (NCSIG) is funded by Federal and State appropriations. NCSIG awards are based on need as determined by a need analysis performed by the American College Testing Program (ACT) or The College Scholarship Service (CSS).

Applications for the NCSIG may be secured from High School Guidance Officers or the Financial Aid Office and submitted to The College Foundation, Inc. which administers the program. The NCSIG is for North Carolina Residents.

The Prospective Teachers Scholarship Loan Fund provides funds for prospective teachers each year. The loans are made in the amount of not more than $900. The fund is administered by the State Superintendent of Public Instruction, Raleigh, North Carolina. All scholarship loans are evidenced by notes which bear interest at the rate of four percent per annum from September 1 following fulfillment by a prospective teacher of the requirements for a teacher's certificate based upon the bachelor's degree. Scholarship loans, together with four per cent thereon, may be cancelled by teaching one full year in North Carolina for each annual scholarship received. Consideration for a scholarship loan is given on the basis of the aptitude, purposefulness, scholarship, character and financial need of the applicant. For detailed information about the program, write to Prospective Teachers Scholarship Loan Fund, State Department of Public Instruction, Raleigh, North Carolina.

Basic Educational Opportunity Grant (BEOG)

The Education Amendments of 1972 authorized a program of financial aid known as the Basic Educational Opportunity Grant. It is expected to provide awards to students of up to $1,400 for each undergraduate year. However, the grant cannot exceed the need of the student nor can it be for more than 50 per cent of the actual costs of attendance at the institution the student has chosen. Therefore, full entitlement at the University of North Carolina at Charlotte may be somewhat less than the prescribed $1,400.

Applications are available on request from the Financial Aid Office.

All undergraduate students will be required to apply for BEOG before consideration can be given to any application for University controlled funds.

Scholarships

The Bonnie E. Cone Merit Scholarship is awarded annually to students having high moral character and proven scholastic attainment whose further education at the University will, in the judgment of the scholarship committee, enhance the citizenship of the recipient and advance the service of the University of North Carolina at Charlotte as an institution of excellence.

Following is a list of additional scholarships and the names of individuals, corporations and foundations which provide scholarships:

Alcoa Foundation
Allendale Services, Inc.
Alpha Chapter of Alpha Delta Kappa
Alpha Sigma Chapter of Delta Kappa Gamma
Altrusa Club of Charlotte
American Business Women—Carolina Heritage Chapter
American Business Women—Carolina Charter Chapter
American Business Women—Mecklenburg Chapter
American Business Women—Queen Charlotte Chapter
American Society of Heating, Refrigerating and Engineers Scholarship
American Society for Metals
American Society for Quality Control
Paul Anthony Memorial Scholarship
AREME Shrine No. 3
J. Murrey Atkins Scholarship
Brycie Baber Scholarship
Barnhardt Manufacturing Company
Tom Black Memorial
Blair-Boone Scholarship Fund
Cannon Scholarship for Nursing
Carolina Yarn Association
Carolina Paper Board
Charlotte Association of Insurance Women
Charlotte Board of Realtors
Charlotte Business and Professional Women
Charlotte Civitan Club
Charlotte-Mecklenburg—NCEA
Charlotte North Rotary Club Student Loan Fund
Charlotte Panhellenic Congres
The Charlotte Women's Auxiliary of the N.C. Pharmaceutical Association
Charlotte Woman's Club
Bonnie E. Cone Scholarship
Jim Crockett Memorial
Sanford V. Davenport Scholarship
W. Cleveland Davis Scholarship
Charles C. Dudley Scholarship
Ernst & Ernst Achievement Scholarship
Executives' Secretaries, Inc.
Otto L. Giersch Scholarship

Joris E. Gilbos French Scholarship
Joris E. Gilbos German Scholarship
Harry P. Harding Scholarship
Bronna Watson Hackney Senior Nursing Honors Scholarship
Harrison-Wright Scholarship
Haskins & Sells Scholarship
David Henderson Memorial
Housewares Club of the Carolinas
Jefferson Standard Foundation Scholarship
Jeld-Wen-Wenco Scholarship
Kerley Scholarship for Nursing
Kokenes Award
Lincoln/Jewell, Inc. Insurance Scholarship Fund
McEwen Scholarship
Enloe McLain Scholarship
Pierre Macy Scholarship
William Hugh McEniry Memorial
Mecklenburg Junior Chamber of Commerce
Mecklenburg County Medical Society
Metrolina World Trade Club
Mumaw Engineering
National Association of Accountants—Herbert Conner Scholarship
North Carolina Association of the American Institute of Certified Public Accountants—Charlotte Chapter
Nursing Honors Scholarship
Package Products Company, Inc.
Mr. and Mrs. Jesse W. Page
The Artemis J. Paschal Scholarship Fund
Peat, Marwick, Mitchell Accounting Scholarship
Pepsi Cola Bottling Company
Pilot Club of Charlotte
Price Waterhouse Foundation, Inc.
Cecil Prince Scholarship
Professional Engineers Association—South Piedmont Chapter
Professional Engineers—Ladies Auxiliary
Puette Scholarship
Quota Club of Charlotte
The Ramseur Tutoring Fund
George A. Rawlings Scholarship
Refabco, Inc. Scholarship
George H. Roberts
Glenn G. Ritchie, Jr. Memorial Scholarship
Rodgers Builders, Inc. Scholarship
Frank Sherrill Scholarship
Schoenith Scholarship-Loan
Servomation of Charlotte
Sheldon P. Smith Scholarship
Lonnie Sides Memorial
Sprague Electric Company
Joseph Carl Stepp Memorial
Charles H. and Clara Stone Scholarship
A. K. Sutton Scholarship
F. Michael Thomas Loan Fund
Mr. and Mrs. J. R. Thompson

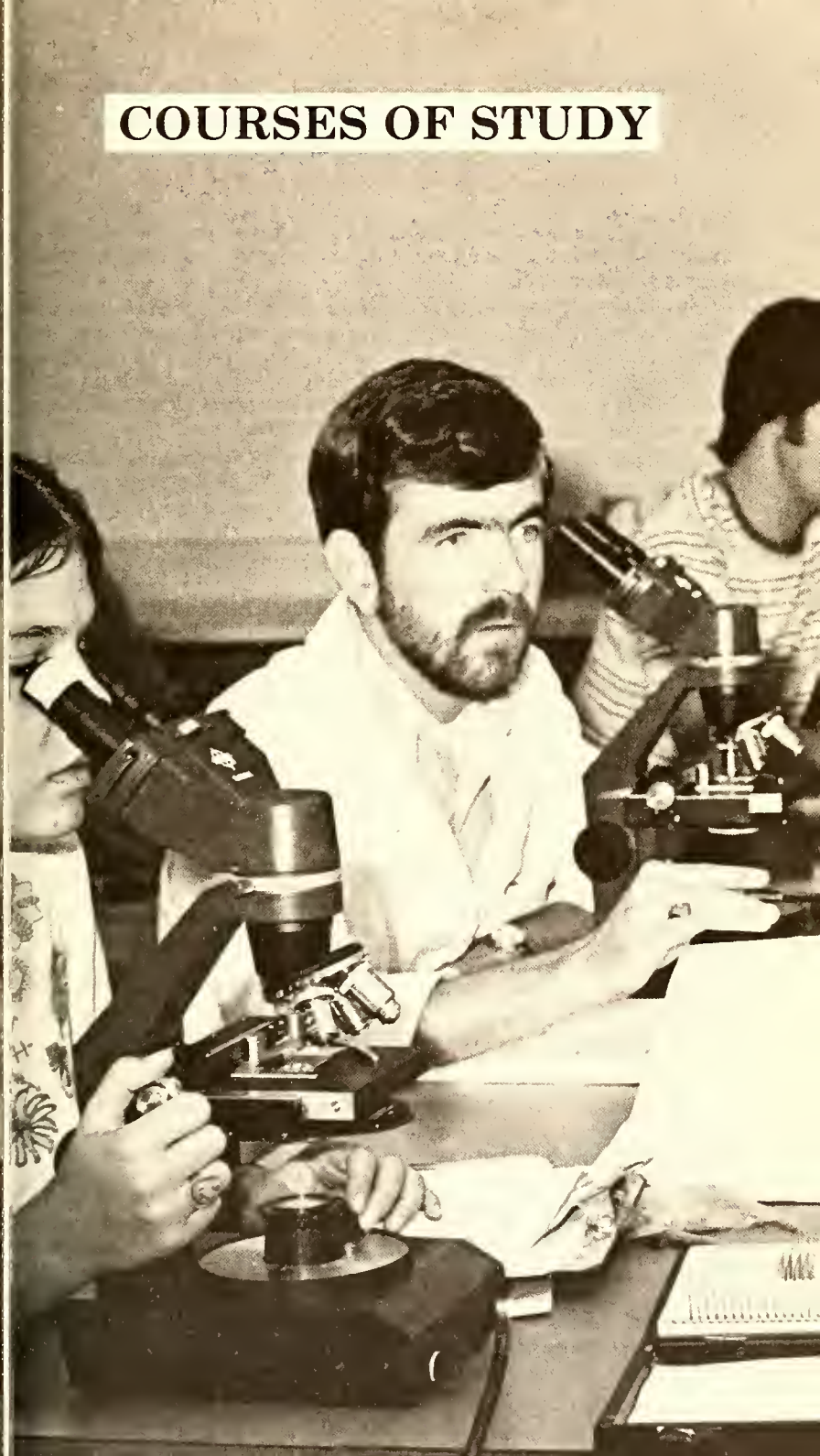
Tate-Culbertson Scholarship for Black Students
UNCC Distaff Loan Fund
UNCC Bookstore Scholarship
Cliff Westbrook Scholarship
Earle Whitton Scholarship
Mr. and Mrs. J. L. Winningham
Women in Construction of Charlotte
Women's Allied Auxiliary of N.C. Motor Carriers
Zonta Club of Charlotte

Employment

The Office of Student Aid assists the student in locating work on campus during his undergraduate years as part of the program of financial assistance. The University participates in the Federal Work-Study program and often couples part-time work with scholarship or loan assistance to meet the financial need of a student.

The Placement Office assists the student in obtaining part-time, full-time or summer employment off campus and, whenever possible, endeavors to relate work experience to career objectives. (See more detailed statement under *Placement* pages 24-25.)

COURSES OF STUDY



Courses of Study

Following are courses offered by the University of North Carolina at Charlotte, listed by colleges and under the department or academic area concerned.

Courses are listed with a course number, the title of the course, the semester hours credit given in parentheses, prerequisites, if any, and a description of the subject matter of the course, with whatever requirements of class or laboratory hours are applicable. If no class hours are given, the number of class sessions per week is the same as the number of semester hours credit for the course.

Courses are, in general, numbered 100-199 for freshmen, 200-299 for sophomores, 300-399 for juniors and 400-499 for seniors. However, prerequisites for each course must be consulted to determine the student's eligibility to take that course.

Where a suggested degree program is not listed by a particular department, the student must arrange his program in consultation with the department. However, every student should consult the department of his intended major to be certain that he is following an approved program which will enable him to progress logically and successfully to the conclusion of his degree program, and to fulfill the requirements of both the University and the major department or professional sequence.

Students intending to teach should consult both the major department and the College of Human Development and Learning.

College of Architecture

Dean: Professor Hight
Professors: Anderson, Langhorst, Melaragno
Associate Professors: Gallis, Morgan, Vollendorf
Assistant Professors: Hauser, Nelson
Instructors: Dalton, Moore, Vaseff
Visiting Assistant Professors: Easton, Marchant
Part-time Lecturers: Egan, Li, Livingstone, Pease

The College of Architecture recognizes that in today's world, the profession of architecture must be engaged in all aspects of research, planning, programming and design of our environment at all scales. Our society's increasing concern for environmental quality and recent recognition that we live in a finite world provides opportunities for architects to be involved in all aspect of design and planning of our buildings, building complexes, communities and cities as well as other physical objects; while at the same time effectively utilizing our energy, land, material and capital resources.

Likewise, the College deems it important that if we are to provide communities, cities and buildings which are humane and economically sound, technology must be integrated with physical, societal, psychological and ecology factors.

Therefore, we seek to stimulate a sense of inquiry within each student. Attention is given to studying architectural issues as well as developing techniques of problem identification-solving. We believe it important for students to develop the necessary verbal and visual skills for examining environmental issues, testing ideas and communicating with others as well as being equally proficient with analysis and synthesis. Consequently, process and product are deemed equally important and interrelated.

In recognition that a variety of skills and information are required, the College possesses a highly varied faculty who are knowledgeable in a wide range of areas. Equally important, it is recognized that students vary in needs and orientation. Thus, the faculty-student ratio is kept as low as possible so that each student receives individual attention. In addition to the full-time faculty, a number of excellent local architectural practitioners participate as part-time instructors. Furthermore, the College has a rather extensive visiting lecture series in order to expose students to architects who have distinguished themselves. While promoting architectural academic inquiry, the program seeks to assist needy communities when possible and where it fits into an educational

context. Therefore, students and faculty have been able to help improve the environmental quality of neighboring communities and utilizing the University's and region's resources.

UNCC's being located in a major, rapidly growing urban center provides the College with a unique opportunity to study first hand the problems that plague U. S. urbanization. Thus, students have an opportunity to view major projects under construction, evaluate the performance of major buildings and building complexes and study problems and potentials of urbanization patterns.

The program is organized into a four-year segment (Bachelor of Arts in Architecture' followed by a one-year segment (Bachelor of Architecture).

Bachelor of Arts in Architecture: This degree is a nominal four-year program requiring 130 semester hours, including 72 hours in architectural course work.

Graduates from the Bachelor of Arts in Architecture program are eligible for the professional program. Likewise, they can pursue graduate study in some related fields such as planning, urban design, landscape architecture, etc.

In addition, graduates may be able to continue their studies in other disciplines related to their education as an undergraduate or may choose to leave the University with the Bachelor of Arts degree for employment.

Bachelor of Architecture: The Bachelor of Architecture degree requires, admission based upon a prior degree, 32 semester credit hours, 26 hours in architectural courses and six hours in electives. The professional degree will be the one accredited by the National Architectural Accrediting Board and recognized by the State of North Carolina Architectural Registration Board for by-passing the professional equivalency exam. Any credits earned in the program will be applicable as education credits toward meeting the requirements of the State Board.

Vertically, the program is structured into four tracks: The Architectural Studio/Seminar Program, Architectural Lecture/Seminar Programs, General Academic Requirements, and Directed Electives.

Architectural Studio/Seminar: This primarily consists of a sequence of seven-credit Studio/Seminars, totaling 56 hours for the Bachelor of Arts in Architecture and an additional 14 hours for the Bachelor of Architecture. These courses are primarily oriented toward problem-solving and communication skill development as well as achieving needed understanding of architectural environ-

mental design and planning through a system of lectures, seminars, readings, research, field work and workshops. Both individual and group inquiries and studies are included. It is intended for students to increasingly contribute to his/her studio through inclusion of information and skills gained through the non-studio educational experiences.

General Requirements: It consists of six hours of English, and three hours of Mathematics, eight hours of Natural/Physical Sciences, and six hours of Social/Behavioral Science.

Directed Electives: In order for a student to pursue faculty approved concentrated study in an area of his/her choosing or to obtain a general education, 35 hours of elective study are required for the Bachelor of Arts in Architecture, and an additional six hours are required for the Bachelor of Architecture degree. While some of these hours may be taken as specialized architectural subjects study, students are strongly encouraged to take courses outside the College.

The responsibility for elective course study is the student's, but it is done with faculty advisement, and the insight gained from the Professional Options Seminar. The opportunities vary; i.e., a student may decide upon a general education background; or he may decide to do concentrated study in environmental science (biology, botany, ecology, chemistry, earth science or physics); human science (psychology, sociology, anthropology, criminal justice, education or political science); technology (computer science, mathematics or urban engineering) or creative arts.

Architectural Lectures/Seminar: Specific information which can be integrated into the Studio/Seminar sequence is provided through lecture/seminar courses in architectural history (nine semester hours) and architectural technology (six semester hours). In addition, six hours of architectural technology and six hours of professional practice lecture/seminar are required for the Bachelor of Architecture degree. It should also be noted that students may elect, with the College approval, to take several Special Architectural Topics and/or Directed Electives.

Dual Degree Option: It is possible for students to pursue a double degree program after the freshman year. Thus it is possible for a student to major in architecture and a selected discipline such as history, engineering, social sciences, etc. Any arrangement must meet the University's and college's requirement. The Dual Degree program shall be structured beforehand in consultation with a faculty adviser and approval of the dean.

Applicants must meet the College of Architecture's as well as the University's admissions requirements.

Transfer students are given appropriate credit for courses taken elsewhere; thus, advanced standing in the program is possible.

CURRICULUM REQUIREMENTS FOR THE BACHELOR OF ARTS IN ARCHITECTURE AND THE BACHELOR OF ARCHITECTURE

FRESHMAN YEAR

Architecture 101 STUDIO/SEMINAR	7	Architecture 102 STUDIO/SEMINAR	7
Mathematics 120	3	Architecture 104	1
English 101	3	Physics 101	4
Natural Science Elective	4	English 102	3
		Elective	2
	17		17

SOPHOMORE YEAR

Architecture 201 STUDIO/SEMINAR	7	Architecture 202 STUDIO/SEMINAR	7
Architecture 303 HISTORY	3	Architecture 403 HISTORY	3
Biology 369 or Earth Science 370	3	Social Science Elective	3
Elective	3	Elective	3
	16		16

JUNIOR YEAR

Architecture 301 STUDIO/SEMINAR	7	Architecture 302 STUDIO/SEMINAR	7
Architecture 493 HISTORY	3	Architecture 404 BUILDING SYSTEMS	3
Architecture 304 BUILDING SYSTEMS	3	Elective	3
Elective	3	Elective	3
	16		16

SENIOR YEAR

Architecture 401 STUDIO/SEMINAR	7	Architecture 402 STUDIO/SEMINAR	7
Elective*	3	Elective*	3
Elective	3	Elective	3
Elective	3	Elective	3
	16		16

* With the College of Architecture's approval, ARC 350 Special Topics or ARC 390 Independent Study may be taken in lieu of elective.

Total requirements for Bachelor of Arts in Architecture: 130 hours

PROFESSIONAL YEAR

Architecture 501 STUDIO/SEMINAR	7	Architecture 502 STUDIO/SEMINAR	7
Architecture 504 BUILDING SYSTEMS	3	Architecture 508 BUILDING SYSTEMS	3
Architecture 505 PROFESSION	3	Architecture 506 PROFESSION	3
Elective	3	Elective	3
	16		16

Total Requirements for Bachelor of Architecture: 162 hours

COURSE DESCRIPTIONS

ARC 101. STUDIO/SEMINAR (7) (15 hours per week contact). Prerequisite: major in College of Architecture or consent of the dean. An introduction to the development of basic principles related to the creative problem solving process, visual and verbal skills of communication, and concepts of man's environment.

ARC 102. STUDIO/SEMINAR (7) (15 hours per week contact). Prerequisite: major in College of Architecture, ARC 101. Non-major, consent of dean. A series of projects dealing with the basic relationships in the built environment related to physiological, social/cultural, and geophysical criteria.

ARC 104. PROFESSIONAL OPTIONS AND PERSONAL GOAL SETTING. (1) (1 hour per week contact). Seminars on topics concerning professional career options, workshops in personal goal setting, time organization, and working methods.

ARC 201. STUDIO/SEMINAR (7) (15 hours per week contact). Prerequisite: major in Architecture, ARC 102 and ARC 104. Related studies in which the student develops the ability to analyze and synthesize fundamental relationships between the physical environment, human behavior, and architecture.

ARC 202. STUDIO/SEMINAR (7) (15 hours per week contact). Prerequisite: ARC 201. Related studies in which the student develops an ability to analyze and synthesize fundamental relationships between technological systems, processes and architecture.

Third and fourth-year studios are to be so structured as to offer the student options of areas to be studied through designated projects proposed by the faculty. These projects may be semester or year long at the discretion of the faculty member conducting the project. An

alternative series of short-term projects will also be offered for those students who choose a variety of experiences to that of a longer in depth study. All choices, however, are to be made from a group of projects designated by the faculty. At least one building design studio will be offered each semester.

ARC 301. STUDIO/SEMINAR (7) (15 hours per week contact). Prerequisite: ARC 202, ARC 104, ARC 303, MAT 120, BIO 369, PHY 101.

ARC 302. STUDIO/SEMINAR (7) (15 hours per week contact). Prerequisite: ARC 301.

ARC 303. HISTORY AND ARCHITECTURE AND COMMUNITIES OF LATE 18TH AND 20TH CENTURIES (3) The course consists of the study of the theoretical, technical and cultural background of architecture and planning from the middle of the 18th century through the first half of the 20th century. Emphasis will be placed on the development of ideas as they relate to architectural theories of the 20th century.

ARC 304. BUILDING SYSTEMS (3). Prerequisite: MAT 120, PHY 101. Abstracted behavior of structural and environmental control systems in response to static and dynamic forces.

ARC 350. SPECIAL TOPICS (1-3) Prerequisite: major in the COA. This course is designed to meet the particular need of allowing for the examination of special topics in architecture not served by other departmental offerings. May be repeated for credit with the approval of the College.

ARC 390. DIRECTED INDEPENDENT STUDY (1-3) Prerequisite: major in the COA. This course is designed to meet the particular need of allowing students to pursue faculty directed independent study topics not served by other departmental offerings. May be repeated for credit with the approval of the College. May not be taken in conjunction with ARC 501 or 502.

ARC 401. STUDIO/SEMINAR (7) (15 hours per week contact). Prerequisite: ARC 403, ARC 493, ARC 304.

ARC 402. STUDIO /SEMINAR (7) (15 hours per week contact). Prerequisite: ARC 401.

ARC 403. HISTORY OF ARCHITECTURE AND COMMUNITIES OF THE MEDIEVAL AND RENAISSANCE PERIOD. (3) ROME (3) Prerequisite: ARC 303. The course consists of the study of ancient architecture and communities within their cultural frameworks. Emphasis will be placed on the analysis of the symbolic, spatial, religious and political components of each culture as expressed in the built environment.

ARC 404. BUILDING SYSTEMS (2) Prerequisite: MAT 120, PHY 101, ARC 304. Unique structural characteristics of various

building materials as interdependent construction systems, and the unique characteristics of environmental control systems.

ARC 493. HISTORY OF ARCHITECTURE AND COMMUNITIES OF THE MEDIEVAL AND RENAISSANCE PERIOD. (3) Prerequisite: ARC 403. The course consists of the study and development of architecture and communities with emphasis on the built environment as a cultural, political and religious expression.

ARC 501. STUDIO/SEMINAR (7) (15 hours per week contact). Prerequisite: admission to the B. Arch. program. Non-major, consent of the Admissions Committee and dean. Independent and interdisciplinary student projects with regular criticisms to demonstrate and communicate professional competence. Areas of emphasis will be related to program and site derivation and analysis, synthesizing information and issues, and manipulating architectural components to meet the project goals.

ARC 502. STUDIO/SEMINAR (7) (15 hours per week contact). Prerequisite: ARC 501 with a grade of *C* or better. Continuation of ARC 501.

ARC 504. BUILDING SYSTEMS (3) Prerequisite: MAT 120, PHY 101. Integration of structural and environmental control systems in response to static and dynamic geophysical, societal and technological determinants.

ARC 505. PROFESSIONAL. (3) Lecture and discussion; development of contract documents, alternative professional administrative procedures and the methods of synthesizing information from various sources relevant to the practice of architecture. Emphasis will be placed on professional ethics and conduct in all areas of professional practice.

ARC 506. PROFESSIONAL (3) Management and economics of architecture and the building industry. Discussion of contemporary problems of architectural practice and the building industry. Emphasis on understanding new directions within the profession.

ARC 508 BUILDING SYSTEMS SEMINAR (3) Prerequisite: MAT 120, PHY 101, ARC 304, and ARC 404. Open to Architecture majors only. Advanced problems in architectural design and integration of environmental systems.

College of Business Administration

Dean: Professor Palmer

Objectives

The purpose of the educational programs in the College of Business Administration is to provide a broad educational base which will help prepare the student for responsible leadership in business and professional life. The College is committed to the educational development of men and women through study of the concepts and mastery of analytical skills which will prepare students for productive and meaningful careers.

The academic programs, methods of instruction and research efforts in the College are designed to maximize the opportunities for each student to develop his full intellectual potential. The programs reflect the application of evolving concepts and knowledge in accounting, economics, management, the behavioral sciences and the quantitative disciplines. The College of Business Administration, through its programs, attempts to serve effectively the needs of the business and professional community, other units of the University and the local, state and federal governments.

Programs

The College of Business Administration has approximately 1,600 students enrolled in its three academic programs. These are the Bachelor of Arts in Business Administration, the Bachelor of Science in Accounting, which offers full academic preparation for the Certified Public Accountant (CPA) designation, and the Bachelor of Arts in Economics.

The College also offers a Master of Business Administration program at the graduate level. This program is designed for men and women who are fully employed and must undertake graduate study on a part-time basis. *Further information concerning the graduate program may be found in the UNCC Graduate Catalog.*

Programs are designed so transfer students from community colleges and other institutions may enter the program and complete their degree requirements in the last two years of their college work. Students planning to take their first two years in community colleges should inform their adviser or counselor of their intent to apply to UNCC so that their program may be tailored to facilitate transfer.

More than half the students in the College of Business Administration are transfer students, and many students work at

part-time jobs which are closely related to their field of study. Students working more than 20 hours per week should reduce their academic load.

Evening Programs and Summer Sessions

All courses required in the Business Administration and Accounting degree programs are offered in the evening. The Master of Business Administration program is offered entirely in the evening. A full program of summer offerings is also available.

Scholarships

There are a number of scholarships available for both men and women studying in the College of Business Administration. Several of the scholarships are designated to recognize academic excellence in the junior and senior years. *Further information can be obtained from the Financial Aid Office at UNCC.*

Careers

Graduates in the Business Administration program may enter careers in:

Sales and Marketing
Banking and Finance
Transportation
Personnel
Manufacturing
Insurance
Public Administration
Management

Accounting graduates find careers in:
Public Accounting
Internal Auditing
Government Accounting
Controllership
Management

Economic Graduates often enter careers in:
Business Economic Analysis
Teaching
Research
Government

DEPARTMENT OF ACCOUNTING

Chairman: Professor Turner
Associate Professors: Guinn, Williamson
Assistant Professors: Barnes, Godfrey, Higgins, Jolly, Malmgren
Lecturers (part-time): Chitty, Darcy, Dunkle, Greer, Hinson, Hockfield, Johnson, Wallace

A major in Accounting leading to the B.S. degree consists of 27 semester hours of Accounting courses, 33 semester hours of related work in business administration, economics and mathematics as listed below.

I. Accounting

Principles of Accounting (ACC 201 and 202)	6 hrs.
Managerial Cost Accounting (ACC 371)	3 hrs.
Intermediate Financial Accounting (ACC 374 and 375)	6 hrs.
Specialized Accounting Topics (ACC 471)	3 hrs.
Internal Control and Auditing (ACC 475)	3 hrs.
Federal Taxation (ACC 477 and 478)	6 hrs.

II. Business Administration

Marketing Management (BUS 310)	3 hrs.
Financial Management (BUS 320)	3 hrs.
Business Law I (BUS 350)	3 hrs.
Operations Management (BUS 300)	3 hrs.
Management of Human Resources (BUS 340)	3 hrs.

III. Economics

Principles of Economics (ECO 201 and 202)	6 hrs.

IV. Mathematics

Basic Concepts of Mathematics (MAT 101)	3 hrs.
Calculus (MAT 120)	3 hrs.
Algorithmic Languages (CSC 100)	3 hrs.
Statistics (MAT 122)	3 hrs.

Students who complete a major in Accounting will meet the educational requirements to take the North Carolina Certified Public Accountant Examination.

In addition to the University requirement of a 2.0 minimum quality point average, a student must have at least a 2.0 quality point average in all 300 and 400-level required accounting courses in order to obtain a B.S. Degree in Accounting.

RECOMMENDED CURRICULUM FOR THE B.S. DEGREE IN ACCOUNTING

FRESHMAN YEAR

English 101	3	English 102	3
Laboratory Science	4	Laboratory Science	4
Mathematics 101	3	Mathematics 120	3
Humanities	3	Humanities	3
Elective (1)	2	Elective (1)	2
	15		15

SOPHOMORE YEAR

Principles of Economics (ECO 201)	3	Principles of Economics (ECO 202)	3
Algorithmic Languages I (CSC 100)	3	Statistics (MAT 122)	3
Principles of Accounting (ACC 201)	3	Principles of Accounting (ACC 202)	3
Elective (2)	6	Elective (2)	6
	15		15

JUNIOR YEAR

Intermediate Financial Acct. I (ACC 374)	3	Intermediate Financial Acct. II (ACC 375)	3
Marketing Management (BUS 310)	3	Operations Management (BUS 300)	3
Management of Human Resources (BUS 340)	3	Managerial Cost Acct. (ACC 371)	3
Electives (2)	6	Electives (2)	6
	15		15

Business Law I (BUS 350)	3	Internal Control and Auditing (ACC 475)	3
Income Taxation for Individuals (ACC 477)	3	Advanced Income Taxation (ACC 478)	3
Financial Management (BUS 320)	3	Electives (3)	9
Specialized Acct. Topics (ACC 471)	3		
Elective	3		
	15		15

A minimum of 12 hours of electives must be taken from courses other than those offered in the College of Business Administration. Behavioral sciences and communication courses are recommended for inclusion in the 12 hours of electives.

For those students planning to take the CPA exam, it is recommended that they take the following additional courses in their senior year:

Business Law II (BUS 450)	3 hrs.
Management Science (BUS 431)	3 hrs.
CPA Preparation (ACC 479)	3 hrs.

COURSE DESCRIPTIONS

ACCOUNTING

ACC 201. PRINCIPLES OF ACCOUNTING I. (3) A study of fundamental accounting principles, with emphasis on managerial use of accounting data and analysis of financial statements. Three lecture hours and one laboratory period of two hours a week. The laboratory period is optional unless scheduled for an examination.

ACC 202. PRINCIPLES OF ACCOUNTING II. (3) Prerequisite: Accounting 201. A study of basic accounting theory, corporate financing and reporting; financial planning; and an introduction to managerial accounting. Three lecture hours and one laboratory period of two hours a week. The laboratory period is optional unless scheduled for an examination.

ACC 371. MANAGERIAL COST ACCOUNTING. (3) Prerequisite: Accounting 202. An analysis of the uses of accounting data in planning, controlling and decision-making processes of business enterprises. Three lecture hours and two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 374. INTERMEDIATE FINANCIAL ACCOUNTING I. (3) Prerequisite: ACC 202. An in-depth analysis of the requirements of outsiders (investors, auditors and governments) for information about the status and operations of firms. The application of various theories and concepts will be stressed. Three lecture hours and two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 375. INTERMEDIATE FINANCIAL ACCOUNTING II. (3) Prerequisite: ACC 374. A continuation of ACC 374 with an emphasis on accounting problems peculiar to corporate organizations and governmental units. Three lecture hours, two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 385. FEDERAL INCOME TAXATION. (3) Prerequisite: ACC 202. Open to non-accounting majors only. A study of federal income tax laws and regulations applicable to individuals and business organizations. Three lecture hours, two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 471. SPECIALIZED ACCOUNTING TOPICS. (3) Prerequisite: ACC 375. Specialized accounting topics with emphasis on consolidated statements. Three lecture hours, two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 475. INTERNAL CONTROL AND AUDITING. (3) Prerequisite: ACC 375. An analysis of the accounting control systems and the independent auditor's examination of the system and other evidence as a basis for expressing an opinion on financial statements. Three lecture hours, two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 477. INCOME TAXATION FOR INDIVIDUALS. (3) Prerequisite: ACC 202. A study of federal income tax laws and regulations applying to individuals. Three lecture hours, two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 478. ADVANCED INCOME TAXATION. (3) Prerequisite: ACC 477. A study of federal income tax laws and regulations applying to partnerships, corporations, estates and trusts, and estate, gift and inheritance taxes. Three lecture hours, two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 479. CPA PREPARATION. (3) Prerequisite: ACC 471. Intensive study of principles and techniques involved in the solution of advanced accounting problems encountered in public accounting practice. Three lecture hours, two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 490. CURRENT DEVELOPMENTS IN ACCOUNTING. (1) (2) or (3) May be repeated for credit. Prerequisite: consent of the department. A research project will be required. Topics will be selected from internal and external auditing, governmental accounting, income taxes, managerial accounting and accounting theory.

DEPARTMENT OF BUSINESS ADMINISTRATION

Chairman: Edward L. Walls, Rush S. Dickson Professor of Finance
Professor: Conrad
Associate Professors: Sage, Trosch, Williams
Assistant Professors: Barnes, Geurin, Nilsson, Pinckney
Lecturers: Basini, Bowers, DeVore, Graves, Stevenson

The goals of the undergraduate program in business are to provide graduates with:

1. Specialized knowledge and skills enabling them to perform with competence upon graduation and progress rapidly in their profession.

2. Broad knowledge of business organization and processes enabling them to see individual functions from the perspective of the organization and to facilitate constructive change.

3. The qualities traditionally attributed to a liberal arts education at the university level; including a disciplined and inquiring mind, and understanding of one's culture and self.

To this end the Department offers a curriculum leading to the Bachelor of Arts Degree in Business Administration composed of the following major components:

1. *Prerequisites:* Courses necessary as preparation for business courses.

2. *The Business Core:* Business, Accounting and Economics courses designed to provide essential understanding of business processes and organization.

3. *Business Electives:* Courses designed to provide depth in specialized areas.

4. *Other Electives:* Throughout the undergraduate curriculum, a student can, and is encouraged, to elect courses outside the business area in following a personal interest or course of study which will add breadth and depth of understanding and complement the business degree. Elective hours can also be applied to *General Electives* offered by the Department.

To complete a program a candidate must complete the following courses:

1. *Prerequisites*—to be completed prior to enrollment in Business Courses.
   a. *Mathematics*
      Basic Concepts of Mathematics (MAT 101) ..... 3 hrs.
      Calculus (MAT 120) ..... 3 hrs.
      Statistics (MAT 122) ..... 3 hrs.

b. *Economics*
Principles of Economics (ECO 201 and 202) .... 6 hrs.**

c. *Accounting*
Principles of Accounting (ACC 201 and 202) ... 6 hrs.**

2. *The Business Core:* To be substantially completed before enrolling in business electives.
Operations Management (BUS 300) ..... 3 hrs.
Marketing Management (BUS 310) ..... 3 hrs.
Financial Management (BUS 320) ..... 3 hrs.
Management of Human Resources (BUS 340) ..... 3 hrs.
Business Law I (BUS 350) ..... 3 hrs.
Business Communications (BUS 360) ..... 3 hrs.
Business Policy (BUS 460) ..... 3 hrs.
Accounting 371 ..... 3 hrs.
Economics 325 ..... 3 hrs.

3. *Business Electives*
As elected by student ..... 9 hrs.

TOTAL HOURS REQUIRED ..... 57 hrs.

4. *Other electives:* 120 credit hours are required for graduation, and the student has 60 hours available as electives. These can be used as the student and his adviser deem advisable in designing a curriculum to meet student objectives. Possibilities include a concentration in areas such as the physical and social sciences, or other professional schools. In this way, the student can pursue non-business subjects in depth either to satisfy personal interest or augment the business degree for professional purposes.

In computing the quality point average in the major, all required courses are included.

TYPICAL PROGRAM FOR BUSINESS ADMINISTRATION

FRESHMAN YEAR

Fall		*Spring*	
*English 101	3 Hrs.	*English 102	3 Hrs.
*Math 101	3 Hrs.	*Math 120	3 Hrs.
*Lab Science	4 Hrs.	*Lab Science	4 Hrs.
*Humanities	3 Hrs.	*Humanities	3 Hrs.
Elective	3 Hrs.	Elective	3 Hrs.
Total	16 Hrs.	Total	16 Hrs.

*General Degree Requirement
**ECO 325 and ACC 371 also required as part of Business Core.

SOPHOMORE YEAR

[1]*Eco. 201	3 Hrs.	[1]*Eco. 202	3 Hrs.
[1] Acc. 201	3 Hrs.	[1] Acc. 202	3 Hrs.
Electives	9 Hrs.	[1] Math 122	3 Hrs.
		Electives	6 Hrs.
Total	15 Hrs.	Total	15 Hrs.

JUNIOR YEAR

Eco. 325	3 Hrs.	Bus. 340	3 Hrs.
Acc. 371	3 Hrs.	Bus. 300	3 Hrs.
Bus. 350	3 Hrs.	Bus. 310	3 Hrs.
Bus. 360	3 Hrs.	Bus. 320	3 Hrs.
Elective	3 Hrs.	Elective	3 Hrs.
Total	15 Hrs.	Total	15 Hrs.

SENIOR YEAR

[2]Bus. Electives	6 Hrs.	[2]Bus. 460	3 Hrs.
Electives	9 Hrs.	[2]Bus. Electives	3 Hrs.
		Electives	9 Hrs.
Total	15 Hrs.	Total	15 Hrs.

COURSE DESCRIPTIONS

BUSINESS ADMINISTRATION

Core Courses

BUS 300. OPERATIONS MANAGEMENT (3) This course will provide an introduction and development of the management functions in manufacturing and non-manufacturing organizations. It will take a systems approach in providing an insight into the organizational environment, the basic operating functions, the problems and decisions a manager encounters and the solution techniques and models with which he deals. Computer application will be included where appropriate.

BUS 310. MARKETING MANAGEMENT (3) The objective of this course is to acquaint the student with the marketing concept and the various aspects of marketing and its interface with the external environment and other functional areas of the organization. It is aimed at developing breadth in the subject and providing a foundation for further study in marketing. At the same time, it will have wide enough coverage to stand alone for those who do not wish to concentrate in marketing.

*General Degree Requirement

[1]Prerequisites for Upper division required business courses

[2]These courses may be taken in business, accounting and or economics at the 300 or 400 level

[3]To be taken after all required business core courses have been fulfilled

NOTE It should be noted that a student needs only 120 hours for a B A Degree in Business Administration.

BUS 320. FINANCIAL MANAGEMENT (3) Prerequisite: ACC 371. Principles and problems of financial aspects of managing an individual company. Particular emphasis on financial analysis for use in managing capital structure, least-cost asset management, planning and control. Computer application will be included where appropriate.

BUS 340. MANAGEMENT OF HUMAN RESOURCES. (3) A managerial perspective of the leadership, motivation, group dynamics, structure, communications, conflict and change on effective utilization and development of human resources. Emphasis is on applications in business, but the approach is also appropriate for management of hospitals, schools and other nonprofit organizations.

BUS 350. BUSINESS LAW I. (3) A study of the legal setting of business and its relationship to one's personal affairs. Topics covered include: the nature of law and the court system, torts, contracts, commercial paper, consumer credit, sales, partnerships, corporations, the employer-employee relationship, real and personal property.

BUS 360. BUSINESS COMMUNICATIONS. (3) The nature and problems of individual, interpersonal, and organizational communication in business. Various verbal techniques such as presentations, graphics, public speaking and writing will be developed and practiced for effective organizational and individual performance.

BUS 460. BUSINESS POLICY. (3) Prerequisites: All other required business core courses. Concerns the role of top management of the firm in integrating internal functions and environmental forces. Emphasis on defining economic, ethical, political and social factors affecting the firm and their consideration in setting goals and operating policies.

Business Electives

BUS 401. ADVANCED OPERATIONS MANAGEMENT (3) Prerequisite: BUS 300. This course through cases and/or management simulations will enable the student to apply the knowledge he attained in Operations Management. The student, through an application forum, should develop in greater depth his understanding of the operating functions of an organization.

BUS 410. MARKETING RESEARCH AND ANALYSIS (3) Prerequisite: BUS 310. The research course will provide the student with an understanding of marketing research and its usefulness in the organization. The course will deal with scientific marketing research methods with emphasis on collection, analysis and interpretation of data as applied to the solution of marketing problems.

BUS 411. PROMOTION. (3) Prerequisite: BUS 310. This course will cover all areas of marketing promotion, including such topics as

advertising, media selection, selling, packaging and forms of sales promotion. This course will offer basic skills and techniques to allow the student to enter careers in advertising, sales or media.

BUS 420. FINANCIAL ANALYSIS. (3) Prerequisite: BUS 320. Application of appropriate theory and techniques to financial analysis for internal and external uses. Material taught in previous courses is integrated in analysis of individual firms for purposes such as determining debt capacity and stock valuation. Focus will vary from that of internal management to creditors and security analysts.

BUS 421. FINANCIAL INSTITUTIONS AND MARKETS. (3) Prerequisite: BUS 320. A study of financial institutions and money and capital markets which considers their roles in the intermediation process. Special emphasis is focused on the comparative financial policies of financial institutions considered in the context of their market environments.

BUS 430. ADVANCED BUSINESS ANALYSIS. (3) Prerequisite: BUS 300. A study of more advanced probabilistic business problems with extensive use of canned computer programs and preparing system models. The course will center on the application of decision theory to business problems.

BUS 431. MANAGEMENT SCIENCE. (3) Prerequisite: BUS 300. An analytical approach toward understanding the management process and solving management problems. Emphasis will be placed on exploring existing models, but the student should develop an insight for problem development and model building.

BUS 440. LEADERSHIP, PERFORMANCE, EFFECTIVENESS AND CHANGE. (3) Prerequisite: BUS 340. The nature and major dimensions of supervising in work organizations (business, government, hospitals, educational, etc.) in a changing environment. Emphasis on leadership theories and role functions in order to identify, measure and predict managerial effectiveness. The role of a leader as a change agent is particularly stressed. Methods and techniques of management and organizational development will be reviewed and utilized for leader development for optimum benefit to the firm and the individual leader. Case analysis and role play exercise used to stimulate actual problems.

BUS 441. PERSONNEL ADMINISTRATION. (3) Prerequisite: BUS 340. The study of effectively selecting, utilizing, assessing and developing human managers as well as the role of the personnel department in administering human resources in a changing and demanding environment. Experience in developing and utilizing behavioral science research methods to assess effectiveness.

BUS 450. BUSINESS LAW II. (3) Prerequisite: BUS 350. The study of the Uniform Commercial Code. Subjects covered include sale of goods, commercial paper, bank deposits and collections, letters of credit, bulk transfers, documents of title, investment securities and secured transactions.

BUS 465. MANAGEMENT INFORMATION SYSTEMS. (3) Prerequisite: consent of the instructor. The principles of the structure and the analysis of the information flows within an organization are studied. The concept of a unified MIS system is stressed using both internal and external data sources.

BUS 370. PERSONAL FINANCE. (3) (No Prerequisite) A course in the management of personal and family financial affairs. Topics include family financial planning and budgeting, saving for financial emergencies, consumer purchases and the use of credit, security and real estate investments, protection against premature death or disability, providing retirement income, insurance needs, income and estate tax planning.

BUS 371. PRINCIPLES OF INSURANCE. (3) (No Prerequisites) A study of the different types of nonspeculative risks faced by individuals and businesses and the possible alternative methods of treating such risks. An examination of the specific application of these methods in regard to life, health, property, casualty and liability insurance contracts.

BUS 372. REAL ESTATE. (3) (No Prerequisites) A survey of problems involved in the acquisition, management and transfer of real estate. Topics include: real estate contracts and leases; deeds, mortgages and other liens; real estate brokerage; appraisals and financing; taxation; and governmental regulations.

BUS 373. SMALL BUSINESS MANAGEMENT. (3) (No Prerequisites) Consideration of opportunities and obstacles of starting and operating a small business. Emphasis will be on intergrating all managerial requirements (financial, marketing, operation, legal, logistics, accounting and behavioral) of owning and operating a small business. Study of opportunities and assistance provided by franchises, federal, state and local agencies. Practice in solving small business problems will be gained through case analysis.

BUS 374. INTERNATIONAL BUSINESS PROCESSES AND PROBLEMS. (3) (No Prerequisites) An introduction to the process, institutions and problems associated with exporting, importing and management of multinational businesses.

BUS 390. TOPICS IN BUSINESS. (3) Prerequisite: consent of the instructor. Topics from the area of Management and Administration. The course may be repeated for credit.

BUS 490. DIRECTED STUDY. (3 to 6 hrs. credit) Prerequisite: consent of the instructor. Enrollment granted only by permission of the faculty with whom the work will be performed. The student's work assignments will be designed by the student and faculty member who will oversee the project or study. The credit hours will be determined prior to enrollment and will be based on the particular project undertaken.

DEPARTMENT OF ECONOMICS

Acting Chairman: Associate Professor Davis
Professor: Wubben
Associate Professor: Rogers, Jorgensen, Liner
Instructors: Kellmann, Renfro
Lecturers: Ramsey, Martin
Lecturers (part-time): Snider, Snyder, Allsbrook, Ou

The Department of Economics offers two courses of study leading to a B.A. degree. Students may select a major in economics with either a business administration emphasis or a social science emphasis.

Business Administration Emphasis

A major in economics, with a business administration emphasis, leading to the B.A. degree consists of 54 hours specified as follows:

I. Mathematics:
Basic Concepts of Mathematics (MAT 101)* 3
Calculus (MAT 120)* 3
Introduction to Computers (CSC 101) 3

II. Economics:
Principles of Economics (ECO 201 and 202)** 6
Economics of the Firm (ECO 325) *OR*
Microeconomic Analysis (ECO 322) 3
Money and Banking (ECO 315) *OR*
Macroeconomic Analysis (ECO 323) 3
Econometrics (ECO 312) 3
Industrial Organization & Public Policy (ECO 480) 3

III. Business Administration and Accounting:
Principles of Accounting (ACC 201 and 202) 6
Financial Management (BUS 320) 3
Two of the Following:
Marketing Management (BUS 310)
Business Law I (BUS 350)
Operations Management (BUS 300)
Management of Human Resources (BUS 340) 6

IV. Economics Electives:
To be selected by the student from the 300 and 400-level offerings of the Department of Economics 12

Social Science Emphasis

A major in economics, with a social science emphasis, leading to the B.A. degree consists of 54 hours specified as follows:

*Will satisfy general University requirement for mathematics or Foreign Language.
**Will satisfy the general University requirement for social science.

I. Mathematics

Basic Concepts of Mathematics (MAT 101)*	3
Calculus (MAT 120)*	3
Introduction to Computers (CSC 101)	3

II. Economics

Principles of Economics (ECO 201 and 202)**	6
Microeconomic Analysis (ECO 322)	3
Macroeconomic Analysis (ECO 323)	3
Econometrics (ECO 312)	3
Evolution of Economic Thought (ECO 477)	3

III. Social Science Electives

Course work to be selected from at least three of the following disciplines: geography, history, political science, psychology, sociology 15

IV. Economics Electives

To be selected by the student from the 300 and 400-level offerings of the Department of Economics 12

In computing the quality point average in the major, all required courses except Mathematics 101 and Mathematics 120 are included.

It is recommended that students who plan to take graduate work in economics take additional work in mathematics and consult with their advisers concerning this recommendation.

B.A. IN ECONOMICS WITH BUSINESS ADMINISTRATION EMPHASIS

FRESHMAN YEAR

English 101	3	English 102	3
Mathematics 101	3	Mathematics 120	3
Laboratory Science	4	Laboratory Science	4
Humanities	3	Humanities	3
General University Elective	3	General University Elective	3
	16		16

SOPHOMORE YEAR

Principles of Economics (ECO 201)	3	Principles of Economics (ECO 202)	3
Introduction to Computers (CSC 101)	3	Principles of Accounting (ACC 202)	3
Principles of Accounting (ACC 201)	3	General University Electives	9
General University Electives	6		
	15		15

*Will satisfy general University requirement for mathematics or Foreign Language.
**Will satisfy the general University requirement for social science.

JUNIOR YEAR

Economics of the Firm (ECO 325)	3	Money and Banking (ECO 315)	3
Econometrics (ECO 312)	3	Economics Elective	3
Financial Management (BUS 320)	3	Business Elective	3
General University Electives	6	General University Electives	6
	15		15

SENIOR YEAR

Industrial Organization & Public Policy (ECO 480)	3	Economics Electives	6
Economics Elective	3	General University Electives	9
Business Elective	3		
General University Electives	6		
	15		15

B.A. IN ECONOMICS WITH SOCIAL SCIENCE EMPHASIS

FRESHMAN YEAR

English 101	3	English 102	3
Mathematics 101	3	Mathematics 120	3
Laboratory Science	4	Laboratory Science	4
Humanities	3	Humanities	3
General University Elective	3	General University Elective	3
	16		16

SOPHOMORE YEAR

Principles of Economics (ECO 201)	3	Principles of Economics (ECO 202)	3
Introduction to Computers (CSC 101)	3	Social Science Elective	3
Social Science Elective	3	General University Electives	9
General University Electives	6		
	15		15

JUNIOR YEAR

Microeconomic Analysis (ECO 322)	3	Macroeconomic Analysis (ECO 323)	3
Econometrics (ECO 312)	3	Economics Elective	3
Social Science Elective	3	Social Science Elective	3
General University Electives	6	General University Electives	6
	15		15

SENIOR YEAR

Economics Elective	3	Evolution of Economic Thought (ECO 477)	3
Social Science Elective	3	Economics Electives	6
General University Electives	9	General University Electives	6
	15		15

COURSE DESCRIPTIONS

ECONOMICS

ECO 201. PRINCIPLES OF ECONOMICS-MACRO. (3) Topics considered include the scope and methodology of economics as a social science, the measurement of national income, the theory of national income determination, money and banking and monetary and fiscal policy.

ECO 202. PRINCIPLES OF ECONOMICS-MICRO. (3) Topics considered include the operation of the pricing mechanism of a market economy, the industrial organization of our contemporary capitalistic economy, problems of economic concentration and of agriculture, the theory of income distribution, international economic relationships and comparative economic systems.

ECO 302. CONSUMER ECONOMICS. (3) (Designed for Non-Majors) Survey of economic analysis applied to a variety of consumer problems. Topics include Determination of Family Income, Consumer Demand and Expenditures, Economics of Family Planning, Investment in Consumer Durables, Taxation and Government in Protection and Regulation.

ECO 303. ECONOMIC CONCEPTS. (3) Topics considered include both microeconomic and macroeconomic concepts. The scope and method of economics, the pricing mechanism of markets, the industrial organization of the capitalistic system, the measurement of national income, the theory of national income determination, money and banking and monetary and fiscal policy. Credit will not be given for ECO 303 where credit has been given for ECO 201 or ECO 202.

ECO 305. INDUSTRIAL RELATIONS. (3) Prerequisite: ECO 202. Systematic analysis of the sociological, economic and political forces affecting and affected by the work environment. Special emphasis on market structure, the small group, the legal environment and union structure.

ECO 306. LABOR ECONOMICS. (3) Prerequisite: ECO 201 and 202. The economic implications of basic phenomena in the field of labor, including wage and employment theory, collective bargaining, unemployment and social insurance. Historical and legal forces affecting the work environment are covered.

ECO 312. ECONOMETRICS. (3) Prerequisites: MAT 120 and CSC 100 or 101. An exposition of relevant economics parameters utilizing regression analysis and in-depth studies of relationships between explained and explanatory variables. Topics include simple and multiple regression and correlation, matrix algebra and tests of significance, all as related to the modern theory of econometrics. Frequent use of "packaged" computer programs will be made throughout the course.

ECO 314. RESEARCH METHODS. (3) Prerequisite: MAT 101 and 120, ECO 201 and 202. This course is an introduction to research in economics. It acquaints students with the major sources of data and information necessary to conduct research. Emphasis is placed on the application of elementary research methods to economic problems.

ECO 315. MONEY AND BANKING. (3) Prerequisite: ECO 201. The characteristics and functions of money in the modern economy. The operation of the U.S. banking system; monetary theory and policy.

ECO 317. BUSINESS AND ECONOMIC FORECASTING. (3) Prerequisite: ECO 201. The course analyzes fluctuations in economic activity, including production, employment, prices and industry sales. Topics considered include forecasting methods, business cycle theories, historical record, industry and sales forecasting.

ECO 322. MICROECONOMIC ANALYSIS. (3) Prerequisites: ECO 201 and 202. This course deals with various aspects of microeconomic analysis with its primary emphasis on the theory of utility and production functions. A detailed discussion of resource allocation is undertaken for the determination of optimum output and pricing by a firm operating under various market situations such as pure competition, monopoly, oligopoly and imperfect competition. Emphasis is placed on distribution and welfare theories.

ECO 323. MACROECONOMIC ANALYSIS. (3) Prerequisites: ECO 201 and 202. Pre-or-Corequisite: ECO 312. An analysis of economic aggregates, primarily of income determination. Special emphasis on the development of macroeconomic models and forecasting.

ECO 325. ECONOMICS OF THE FIRM. (3) Prerequisite: ECO 202. A consideration of economic analysis of particular importance to business firms with emphasis on decision-making. Topics covered include demand theory and forecasting; cost theory and analysis; price policies.

ECO 370. MONETARY AND FISCAL POLICY. (3) Prerequisite: ECO 201. An examination of the nature and content of economic behavior of the American economy. This course deals primarily with a critical examination of monetary and fiscal tools and

their application with a view toward full employment, economic growth and price stability.

ECO 375. COMPARATIVE ECONOMIC SYSTEMS. (3) Prerequisite: ECO 202. An institutional and theoretical approach to competitive economics. Includes an analysis of the Marxian theoretical system as well as a comparison of capitalism, socialism and communism.

ECO 390. TOPICS IN ECONOMICS. (3) May be repeated for credit. Prerequisite: consent of the department. Topics from the areas of economic theory, economic development, consumer economics, welfare economics and current economic problems.

ECO 395. DIRECTED INDIVIDUAL STUDY. (Variable credit 1-3 hours. May be repeated for credit.) Prerequisites: junior standing and permission of the instructor and the department. This course involves the independent study of a theoretical and/or policy problem in a special area of economics. The student can pursue a particular problem to a depth much greater than can be undertaken within the scope of existing courses. The topics of the investigation may originate from the student or from the faculty member who will supervise the study.

ECO 412. ECONOMETRICS II. (3) Prerequisite: ECO 312. Tools of analysis developed in this course are more extensive and of a greater depth than those studied in ECO 312 and they allow problems of greater complexity to be studied. Regression and correlation techniques are applied to economic and business problems derived from government and business environments.

ECO 416. PUBLIC FINANCE. (3) Prerequisite: Economics 370. The revenue and expenditure problems of governmental units. Intergovernmental financial relationships and the impact of federal fiscal policy upon the American economy.

ECO 435. ECONOMICS OF DEVELOPMENT. (3) Prerequisites: ECO 201 and 202. Different theories of economic growth and development are examined with a view to their application to varying economic and social systems. Current theoretical models are studied in order to determine their relevance to efficient allocation of resources to both the developed and the developing nations.

ECO 449. WORK-STUDY PROGRAM IN ECONOMICS. (3 to 6 hrs. credit, by determination of faculty committee.) Prerequisites: ECO 201, 202 and 312. Enrollment granted only by permission of a faculty committee from the College of Business Administration. Prior to enrollment, plans for the student's work assignment in this course must be completed. Assignments in government utilities, banking and other paid employment must utilize the techniques and principles learned in core requirements in economics. Work assignments require enough faculty contact with the student and employer to insure satisfactory performance by the student. Such as-

signments must be a minimum of three months full-time, six months half-time and other proportional periods of time.

ECO 471. INTERNATIONAL ECONOMICS. (3) Prerequisites: ECO 201 and 202. A survey of trade theories from classical mercantilism to the contemporary version. A detailed discussion of balance of payments, foreign exchange rate, capital movements and monetary reform proposals is undertaken. Special attention is given to an evaluation of international financial organization and regional groupings.

ECO 477. EVOLUTION OF ECONOMIC THOUGHT. (3) Prerequisite: ECO 202. The development of the great economic ideas of value, distribution, employment, with special emphasis on the foundations of classical economic thought.

ECO 480. INDUSTRIAL ORGANIZATION AND PUBLIC POLICY. (3) Prerequisite: ECO 202. An examination of the characteristics of various types of industries—competitive, oligopolistic, monopolistic and monopolistically competitive—and of the questions of public policy in dealing with problems created by industrial concentration.

College of Engineering

Dean: Professor Barnette

The College of Engineering offers two baccalaureate degree programs: the Bachelor of Science in Engineering (BSE) and the Bachelor of Engineering Technology (BET).

The Engineering Technology program is designed to provide an opportunity for graduates of two-year associate degree engineering technology programs to continue their education at the baccalaureate level. Details regarding this program are found under the Department of Engineering Technology section of this *Catalog*.

Bachelor of Science in Engineering

The Bachelor of Science in Engineering curriculum offers professional engineering education which can be used as the foundation for several different career objectives:

1) Some students will wish to prepare for a career as professional engineers in industry, in business or in consulting.

2) Some will look toward graduate study in order to prepare for careers in research, development or teaching.

3) Still others will desire a more general and more liberal engineering education with the objective of keeping a variety of career avenues open.

Whatever the career objective of the student, a sound engineering educational program must include substantial content in: (1) the humanities and social sciences, (2) the physical sciences, (3) mathematics, (4) and the engineering sciences. Also, (5) there must be an in-depth experience in creative engineering design. The student expecting to accept employment in industry will probably wish to emphasize the engineering design and engineering science aspects of his or her program, while the student preparing for graduate study might emphasize the mathematics and science aspects. A high percentage of engineering graduates ultimately take on executive and management responsibilities in industries and firms which are based upon engineered products and engineering services. Accordingly, some students will want to construct an elective option in their program which includes business administration and economics offerings, and other courses which will strengthen their communication skills.

There are many students who have not settled upon career objectives by the time they enter college, and some who may not develop specific objectives until later in their four-year program of

study. These persons, if they have aptitude and interest in both technical and non-technical areas of knowledge, have the opportunity to synthesize for themselves, with counsel and guidance, a program of study combining engineering and the humanities and social sciences. The combination of liberal and engineering education should offer the student an excellent opportunity to find meaning and self-fulfillment in a technological age, whatever career he may ultimately pursue.

The engineering curricula prescribed by the faculty of the University of North Carolina at Charlotte gives thorough attention to the five essential components of a sound program of study. Those elements which are considered basic to every program of study are specified in the curriculum outline and result in freshman and sophomore requirements which are essentially the same for all engineering students, except for the electives in the humanities and social sciences. This common basic core serves not only as the educational foundation for the professional engineering courses later in the program, but also provides solid preparation for the first phase of the Professional Engineering Registration Examination (EIT Exams).

A high degree of program flexibility is achieved through the use of *Minor Option* electives which provide the student with an opportunity to develop an individualized program within one of the professional engineering departments: Engineering Analysis and Design; Engineering Science, Mechanics and Materials; and Urban and Environmental Engineering. By the careful selection of elective courses the student may achieve a specialization in one of the more traditional fields of engineering (electrical, mechanical, civil, chemical) or an undergraduate foundation for some newly emerging fields (biomedical electronics, ocean engineering).

Requirements for the
Bachelor of Science in Engineering Degree

English 101	3
Humanities and Social Studies Electives	15
Economics 201 or 202	3
Mathematics 105, 141, 142, 241, 271	15
Physics 101, 102, 222	11
Chemistry 101, 101L	4
Science Elective	3
EGR 101 A, B, C; 102 A, B, C	6
ESM 241, 242, 311	9
Departmental Requirements *	42
Minor Option**	15
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*See the departmental section of the catalog for these specific requirements.
**See departmental publications for suggested minor-option outlines

The junior-senior level professional core of the program is composed of the departmental major requirement and a group of Minor Option electives. The Minor Option is to be a coherent collection of courses designed to meet the specific professional goal of the individual student. This elective package may be used in several ways: (1) to develop a second area of interest, e.g., business administration, foreign languages, humanities, social and behavioral sciences; (2) to strengthen the major field of specialization; (3) to obtain significant depth within a particular area of specialization in the major field; (4) to build some strength in another engineering or technical field; (5) to strengthen the mathematics, science and engineering base preparatory to graduate study; (6) to support an interdisciplinary study program, e.g., biomedical electronics, computer science and engineering, biology and physiology related to ocean engineering.

Before undertaking any of the technical elective courses, the student will work out with his/or her adviser a detailed study plan indicating the objectives of the educational program and how the choice of these electives meets these objectives. The requirement of pre-planning the technical and non-technical electives program is intended to assure maximum utilization of curriculum flexibility by actively involving the student in a personalized program of study which will be sound in the professional sense, will recognize and take advantage of the student's best motivations and highest capabilities, and will result in a broad and deep educational preparation for service to and fulfillment in the current technological society.

ACADEMIC REGULATIONS FOR COLLEGE OF ENGINEERING MAJORS

Repeating a Course

A student who is enrolled in the College of Engineering and who has received a grade of *C* or better, *H* or *P* in a course may repeat that course only if he or she has the prior approval of his counselor, department chairman and the dean of the College of Engineering (except for those listed as "may be repeated for credit"). Whenever a course is repeated, the last grade completely replaces the previous grade in computing the quality point average; however, all entries remain a part of the student's permanent academic record. Repeating a course more than once to raise a grade requires the prior approval of the dean of the College of Engineering.

Quality Point Ratio

The quality point ratio at the University of North Carolina at Charlotte for a student enrolled in the College of Engineering is determined by multiplying the number of quality points for each grade by the number of semester hours credit received in that course and adding all accumulated quality points together, then dividing by the total number of semester hours the student has attempted, except those for which the student has received a grade of *I, W, H, P* or *NC*.

When a course is repeated, no additional credit hours attempted accrue, and the quality points of the previous grade are replaced by those of the current grade.

Grade of W

A grade of *W* will be given only on or before 10 calendar days after the date on which preliminary unsatisfactory grade reports are due or if the student withdraws completely from the University.

Adding or Dropping a Course

No Engineering student will be permitted to drop a course after the time period specified under "Grade of *W*" above.

Requirements for Continued Enrollment in the College of Engineering

As a general rule, each student will be allowed to remain at the University of North Carolina at Charlotte for the first two semesters following the first enrollment, or, in the case of a part-time student, until the end of the semester in which the twelfth semester hour is attempted.

As a general rule, the summer sessions at the University of North Carolina at Charlotte shall be open to all students previously enrolled here, including students academically ineligible to continue during the regular academic year.

In order to remain in good standing the student's cumulative quality point ratio must be 2.00 or higher. The quality point deficit is the number of additional quality points which are required to increase the student's cumulative QPA to 2.00. A student with a quality point deficit between one and 13 will be placed on academic probation. A student with a quality point deficit of more than 13 will be suspended (except as stated above).

An Engineering student's eligibility for continued enrollment is shown on a Table of Quality Point Requirements for Continued Enrollment in the College of Engineering. Copies of the table are available in the College of Engineering.

In determining a transfer student's eligibility to continue in the College of Engineering, the student's initial point in the table is considered to be at the minimum good standing level at the number of hours accepted at transfer.

A student will be suspended automatically if, after two successive semesters on probation (excluding summer sessions), he or she fails to achieve a good standing.

Admission of Former Students into Engineering

A student must apply for readmission if he or she did not complete nor enroll in the previous semester. Official withdrawal from either summer term likewise necessitates an application for readmission.

A student who has officially withdrawn from UNCC with a quality point average of 2.00 or higher is eligible for readmission with consideration given to his or her financial obligation to the University.

A former engineering student who has officially withdrawn from UNCC while on probation is eligible for readmission subject to the approval of the department into which he or she seeks readmission. The students' records will be reviewed, giving consideration to both academic records and financial obligations to UNCC.

Although a student who has been suspended by reason of failure to satisfy the requirements for continued enrollment as stated above may apply for readmission at the expiration of the next semester following his suspension, he may instead elect to use the "two-year rule."

Two Year Rule

Any engineering student who has been suspended for academic reasons from UNCC is eligible for *one* readmission to engineering after a minimum period of two years from the last semester of enrollment at UNCC. At the time of readmission, the student must elect one of the following options:

1. All courses previously attempted at UNCC are used for the determination of his or her quality point average. However, for the calculation of the student's quality point average at the time of readmission, any course which has been repeated because of an initial *D* or *F* grade, the quality points for that course shall be based only on the last grade assigned with the associated "hours attempted" counting only once.

2. Only those courses for which the student has received a grade of *C* or better can be used to satisfy degree requirements. His or her quality point average will be based only on work attempted after readmission. Eligibility for continued enrollment is determined as in the case of transfer students.

To qualify for honors or high honors, a student must complete 48 hours in residency in computing his quality point average after readmission to UNCC.

Any student who voluntarily left UNCC and has not attended UNCC for two or more years is eligible for readmission and may exercise either of the preceding options at the time of readmission.

COURSE DESCRIPTIONS

BASIC ENGINEERING

EGR 101 A, B, C. INTRODUCTION TO ENGINEERING PROBLEMS I. (1, 1, 1) An introduction to the concepts, techniques and tools used to solve engineering problems, including computational methods, engineering graphics and introduction to computer usage. NOTE: To satisfy BSE degree requirements, a student completes three courses of one credit-hour each.

EGR 102, A, B, C. INTRODUCTION TO ENGINEERING PROBLEMS II. (1, 1, 1) Prerequisite: EGR 101 or consent of instructor. A continuation of EGR 101, NOTE: To satisfy BSE degree requirements, a student completes three courses of one credit-hour each.

CONTINUING ENGINEERING STUDIES

The College of Engineering sponsors various special educational programs for practicing engineers, technologists, technicians and others in addition to its regular academic degree programs and courses. These include conferences, short courses, seminars and other continuing education programs designed to aid those practicing in the technical professions and occupations to keep abreast of the latest developments in the rapidly expanding technology. The courses listed below are offered regularly on a periodic basis, while many others are offered on demand.

PROFESSIONAL ENGINEERING - BASICS. Forty-five hours of work reviewing mathematics, chemistry, economics and the basic engineering sciences as preparation for the Professional Engineering Basics (EIT or Exam I) Examination.

PROFESSIONAL ENGINEERING - APPLIED. Fifty-four hours of work reviewing applications in chemical, civil, electrical and mechanical engineering and engineering economics as preparation for the Professional Engineering Principles and Practice (Exam II) Examination.

SURVEYING. Eight hours of work reviewing land surveying as preparation for the land surveying examination.

Anyone desiring information on these courses or requesting special offerings may contact the Office of the Dean of Engineering.

LIBERAL ENGINEERING STUDIES

The impact of technology on man's present condition and future prospects has until now received little formal study by engineers despite their close involvement. The College of Engineering has two objectives in initiating a bridge from the engineering arts to the liberal arts. The first is to respond to a major concern on the part of

many of those students *not* majoring in engineering. Many of them realize that there are important social and environmental problems resulting from the radical present and future changes in technology, and it is the aim of these Liberal Engineering Studies to put the problems and their possible technical solutions into perspective.

The following courses are intended for non-engineering students who wish to explore various aspects of the societal-technological interactions.

LE 111. TECHNOLOGICAL BASES OF SOCIETY I. (3) Concepts underlying the systems which relate directly to the life of the individual in relation to the field of engineering. Emphasis on scientific ideas which are relevant to the student—which he or she should understand to participate in the decision of an age of rapidly changing technology. Specific topics include decision making, optimization, modeling and systems. This course is open only to non-engineering students. (May be taken with or without LE 151.)

LE 112. TECHNOLOGICAL BASES OF SOCIETY II. (3) Prerequisite: LE 111. A continuation of LE 111. Introduction to technological concepts which are applicable to the solution of problems of a social and economic, as well as a technical nature—problems which are rapidly becoming the frame of reference for contemporary society. Specific topics include patterns of change, feedback, stability and machines and systems. This course is open only to non-engineering students. (May be taken with or without LE 152).

LE 151. TECHNOLOGICAL BASES OF SOCIETY - LABORATORY I. (1) Corequisite: LE 111. A laboratory course designed to illustrate the concepts presented in LE 111. Simulation of real life situations using simple laboratory equipment. This course is open only to nonengineering students. Two laboratory hours per week.

LE 152. TECHNOLOGICAL BASES OF SOCIETY - LABORATORY II. (1) Prerequisite: LE 151; corequisite: LE 112. A laboratory course designed to illustrate the concepts presented in LE 112. A continuation of LE 151. This course is open only to non-engineering students. Two laboratory hours per week.

LE 311. TECHNOLOGY IN HISTORICAL PERSPECTIVE. (3). Prerequisite: junior standing. Selected historical cases in science, applied science and technology are reviewed to show the impacts that technological advances have had on man's world. Emphasis is placed on the technologies and their effect on man's physical environment rather than on the resulting change in man's viewpoint toward society, economics or politics. This course is designed for non-engineering students.

LE 314. PROBLEMS IN ENVIRONMENTAL CONTROL. (3) Prerequisite: junior standing. Study of a range of environmental problems of interest to the class. The tracing of problem cases to their technological origins, the identification of available, feasible, technological solutions to the specific problems treated. On site in-

spection of industrial sources of pollution will be made in a series of field trips. No credit toward degree requirements for any student in the College of Engineering.

LE 316. ENERGY, POWER AND CONSERVATION. (3) Prerequisite: junior standing. A survey of historic, current and future power sources and devices that includes waterwheels and windmills, steam engines and turbines, internal combustion and jet engines, fission and fusion reactors and geothermal, tidal and solar power. Fuel resource reserves, costs, benefits and conservation will be studied. No credit toward degree requirements for any student in the College of Engineering.

The second objective is to make special provisions for those students majoring in engineering who find that their areas of interest are broader than can be accommodated by existing professional engineering curricula. Under the Minor Option program of the engineering curriculum, these students can elect a planned series of courses totaling at least 15 semester hours in an area of specialized interest other than engineering. The student undertaking this option will work with both his or her engineering career counselor and a faculty adviser from the selected area of interest in planning the program.

DEPARTMENT OF ENGINEERING ANALYSIS AND DESIGN

Chairman: Professor Wayne
Professor and Dean: Barnette
Associate Professors: Allen, Smith
Assistant Professors: Kakad, Lee, Okon
Lecturers: Jenkins (part-time), Pao (part-time)

A new type of professional, a systems engineer, is needed to assume a unique role in today's complex society. The curriculum of the Engineering Analysis and Design Department is structured to produce a graduate engineer who is just as specialized as the more traditionally trained colleague but with the capability of formulating solutions to problems that cut across the traditional boundaries. The systems-oriented approach enables the engineer to cope with the synthesis and analysis of the performance of mechanical and electrical systems in particular and to extend this methodology to physical systems in general.

An integrated six-semester sequence of courses, emphasizing the systems approach to analysis, forms the core of this curriculum. These courses are designed to take advantage of the similiarity of the concepts, analysis techniques and models associated with the various disciplines. Emphasis is placed on the utilization of the computer to assist in the formulation, analysis and design of large systems.

A laboratory sequence of five courses is designed to serve two purposes: (1) to teach the basic techniques of instrumentation and (2)

to relate the analytical methods developed in the classroom to the performance of real physical systems.

The curriculum requirements are flexible enough so that the student may synthesize a program of study to achieve his or her particular objectives and his or her desired degree of specialization. This is done through the use of the minor option, with the guidance and approval of the student's career counselor. If further specialization and a high degree of competence in a particular area are desired, the student may be encouraged to seek an advanced degree.

This systems approach to analysis, coupled with a judicious choice of minor option, provides the student with a balanced and well-rounded education in the fundamentals of engineering which permit a graduate to assume an active and creative position in modern society.

The professional option in Engineering Analysis and Design is accredited by the Engineers' Council for Professional Development.

The departmental requirements for a major in Engineering Analysis and Design are:

EAD 252 - Laboratory I	1
EAD 211 - Linear Networks I	3
EAD 212 - Linear Analysis I	3
EAD 311 - Linear and Dynamic Systems I	3
EAD 312 - Linear and Dynamic Systems II	3
EAD 321 - Fundamentals of Mechanical Design	3
EAD 332 - Fundamentals of Electronics and Semi-Conductors	3
EAD 342 - Electromagnetic Devices	3
EAD 351 - Laboratory II	1
EAD 352 - Laboratory III	1
EAD 381 - Computer Utilization in Engineering	3
EAD 411 - Automatic Control Systems I	3
EAD 412 - Automatic Control Systems II EAD 415 - Mechanical Vibrating Systems	3
EAD 451 - Laboratory IV EAD 452 - Projects Laboratory	2
ESM 341 - Mechanical Behavior of Solids ESM 321 - Introduction to Electromagnetic Fields	3
ESM 342 - Fluid Mechanics	3
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CURRICULUM OUTLINE FOR THE BACHELOR OF SCIENCE IN ENGINEERING

ENGINEERING ANALYSIS AND DESIGN

FRESHMAN YEAR

Physics 101	4	Physics 102	4
Engineering 101 A	1	Engineering 102 A	1

Engineering 101 B	1	Engineering 102 B	1
Engineering 101 C	1	Engineering 102 C	1
Mathematics 141	4	Mathematics 105	1
English 101	3	Mathematics 142	4
		Humanities or S.S.	3
	14		15

SOPHOMORE YEAR

EAD 211	3	EAD 212	3
ESM 241	3	ESM 242	3
Mathematics 241	3	Mathematics 271	3
Chemistry 101	3	Physics 222	3
Chemistry 101L	1	EAD 252	1
Economics 201	3	Humanities or S.S.	3
	16		16

JUNIOR YEAR

EAD 311	3	EAD 312	3
EAD 351	1	EAD 352	1
EAD 381	3	EAD 332	3
EAD 321	3	EAD 342	3
ESM 321 or ESM 341	3	Minor	3
Humanities or S.S.	3	Humanities or S.S.	3
	16		16

SENIOR YEAR

EAD 411	3	EAD 412 or EAD 415	3
EAD 451	1	EAD 452	2
ESM 342	3	ESM 311	3
Minor	3	Minor	3
Minor	3	Minor	3
Science Elective	3	Humanities or S.S.	3
	16		17

COURSE DESCRIPTIONS

ENGINEERING ANALYSIS AND DESIGN

EAD 211. LINEAR NETWORKS I. (3) Prerequisite or corequisite: Mathematics 142. Introduction to Kirchoff's current and voltage equations using oriented linear graph techniques. Formulation of cutset and circuit matrices. Terminal equations of network elements. Formulation of the primary and secondary systems of equations by matrix methods. Network theorems and equivalence. Power and energy functions.

EAD 212. LINEAR ANALYSIS I. (3) Prerequisite: EAD 211. Prerequisite or corequisite: Mathematics 271. A unified study of models and dynamical properties of mechanical, electrical and hydraulic systems. Emphasis is placed on the development and utilization of realistic mathematical models of physical equations with step, pulse and sinusoidal driving functions using Laplace Transforms. The vector transform as an introduction to sinusoidal steady state. Sinusoidal steady state and frequency response of networks.

EAD 252. LABORATORY I. (1) Prerequisite or corequisite: EAD 212. The first in a series of laboratories designed to develop an understanding of the principles and theory of parameter measurement and instrumentation. Instruction in the use of laboratory equipment and the development and application of experimental techniques. Three laboratory hours per week.

EAD 258. BASIC ELECTRICAL ENGINEERING LABORATORY. (1) Corequisite: EAD 268. A laboratory designed to supplement the student's knowledge and enhance his understanding of the principles and operation of electrical circuits, basic electronic devices and energy conversion devices. Not open to Engineering Analysis and Design majors. Three laboratory hours per week.

EAD 268. BASIC ELECTRICAL ENGINEERING. (3) Prerequisites: Physics 102 and Mathematics 142. A study of the fundamental concepts and methods of analysis used in electrical engineering. Topics to include: terminal characteristics of devices, analysis of d.c. and a.c. circuits, elementary operation of electronic devices, and electromechanical energy conversion devices. Not open to Engineering Analysis and Design majors.

EAD 311. LINEAR AND DYNAMIC SYSTEMS I (3) Prerequisites: EAD 212. A unified study of models and dynamical properties of mechanical, electrical and hydraulic systems. Emphasis is placed on the development and utilization of realistic mathematical models of physical aspects of systems. Equation formulation, operational block diagrams and analog simulation. State variable techniques.

EAD 312. LINEAR AND DYNAMIC SYSTEMS II. (3). Prerequisite: EAD 311. A continuation of EAD 311 emphasizing system response characteristics in both the frequency and time domain. Introduction to system analysis techniques.

EAD 321. FUNDAMENTALS OF MECHANICAL DESIGN. (3) Prerequisite: ESM 242 or consent of the department. A study of the design process with examples drawn from the various engineering disciplines. Application of the basic principles of engineering to real world problems, including systems approach to mechanically oriented problems. Introduction to the concepts related to current engineering design problem areas such as noise, artificial environments and human factors.

EAD 322. MECHANICAL SYSTEMS DESIGN. (3) Prerequisites: ESM 341 or consent of the department. An introduction to the mechanical design and dynamic analysis of machine elements and systems; linkages, bearings, gears, springs and other mechanical components used in machine systems.

EAD 332. FUNDAMENTALS OF ELECTRONICS AND SEMICONDUCTORS. (3) Prerequisite: EAD 212. A study of fundamental concepts of principles embracing both vacuum tube and semiconductor theory. Semiconductor and vacuum tube parameters and characteristics. Small signal analysis and equivalent circuits. Rectifier circuitry, vacuum tube and gas tube power devices; thyratrons, ignitrons, etc. Photoelectric devices. Amplifier and oscillator characteristics and their configurations.

EAD 414. NETWORK SYNTHESIS. (3) Prerequisite: EAD 312. Positive real functions, their properties and methods of testing. Driving point synthesis of LC, RC and RL networks into Foster and Cauer networks. One terminal pair RLC network synthesis using the Brune and Bott-Duffin methods. Realization of two terminal pair networks by ladders. Cauer networks, lattices and Darlington networks. Approximation method.

EAD 415. MECHANICAL VIBRATING SYSTEMS. (3) Prerequisite: EAD 212. A study of free and forced vibrations of systems with multidegrees of freedom. Transient vibrations, analog simulation, non-linear vibrations and the vibration of continuous systems.

EAD 421. MACHINE ANALYSIS AND DESIGN I. (3) Prerequisite EAD 322. Senior standing. Technical application of the basic principles of the mechanical science to the analysis of machines and mechanical systems. Methods of design of typical machine elements. Strength and deflection requirements.

EAD 422. MACHINE ANALYSIS AND DESIGN II. (3) Prerequisite: EAD 421. Synthesis of machines and mechanical systems. Analysis, creative design and selection of machines and machine elements.

EAD 431. ELECTRONICS. (3). Prerequisite: EAD 332. A study of electronic and semiconductor devices: transitor and vacuum tube power devices, audio and radio frequency amplifiers, tunnel diode amplifiers, high frequency amplifiers, feedback analysis of vacuum tube and transistor circuits, modulation and demodulation theory and related circuitry. Generalized oscillatory analysis.

EAD 432. COMPUTER ELECTRONICS. (3) Prerequisite: EAD 431. A study of logic and gate circuits, wave-shaping circuits, switching circuits, multivibrators, pulse circuits.

EAD 433. COMMUNICATION THEORY I. (3) Prerequisite: EAD 312. A study of information transmission and modulation systems. Transmission through electrical networks, analysis and comparison of modulation systems; sampling and noise.

EAD 441. ELECTRIC POWER SYSTEM ANALYSIS I. (3) Prerequisite: EAD 312 and ESM 321. A study of polyphase networks, power transmission lines and power network representations. System representations, network equations and solutions. Application of digital computer to power system analysis.

EAD 442. ELECTRIC POWER SYSTEM ANALYSIS II. (3) Prerequisite: EAD 441. A study of symmetrical components and their applications. Symmetrical and unsymmetrical fault and load considerations. Load flow problems and numerical methods. Economic operation and stability studies.

EAD 443. ELECTRIC MACHINERY. (3) Prerequisite: EAD 312. Direct-current machines, induction machine. Machines in control systems. Synchronous machines. Fractional horsepower motors.

EAD 451. LABORATORY IV. (1) Corequisite: EAD 411, and prerequisite: EAD 352. A continuation of EAD 352.

EAD 342. ELECTROMAGNETIC DEVICES. (3) Prerequisite: EAD 212. Magnetic circuits. Transformer principles, equations, circuits. Magnetic amplifiers. Incremental motion transducers. Field of distributed windings. Servo control transformers, selsyns.

EAD 351. LABORATORY II. (1) Prerequisite or corequisite: EAD 311. A study of the various generating, measuring and recording devices and evaluation of their accuracy. A study of the use of instrumentation to monitor operating systems and to determine the characteristics and behavior of physical devices. Three laboratory hours per week.

EAD 352. LABORATORY III. (1) Prerequisite: EAD 351. Prerequisite or corequisite: EAD 312. A continuation of EAD 351, emphasizing the experimental analysis techniques of modeling various systems and devices.

EAD 381. COMPUTER UTILIZATION IN ENGINEERING. (3) Prerequisite: junior standing in engineering or consent of instructor. The application of the digital computer to engineering analysis and design problems. Computer-aided analysis and design.

EAD 382. SWITCHING THEORY AND LOGIC DESIGN I. (3) Prerequisite: junior standing or consent of the instructor. An introduction to switching theory and logic design. Elementary topics in Boolean algebra. Combinational circuits, iterative networks and analysis of sequential circuits. The engineering aspects of logic design are emphasized, culminating in a hardware design problem coordinating the topics covered.

EAD 411. AUTOMATIC CONTROL SYSTEMS I. (3) Prerequisite: EAD 312. A study of transfer functions, block diagrams and signal flow graphs. Feedback control system characteristics. The performance and stability of feedback systems using root locus and frequency response methods. Time domain analysis of control systems. The design and compensation of control systems.

EAD 412. AUTOMATIC CONTROL SYSTEMS II. (3) Prerequisite: EAD 411. A study of state space techniques and useful state space methods. System stability. Controlability and observability of linear systems. The formulation of the state equations for discrete-time systems and the analysis of these systems by matrices. Analysis of nonlinear systems. Optimal control systems studies.

EAD 413. NONLINEAR ANALYSIS. (3) Prerequisite: EAD 312. Solutions of nonlinear problems using numerical methods, graphical methods, phase plane plots, analysis of singular points and analytical techniques. The use of analogs and duals for writing equations. The use of the analog computer and digital computer to solve nonlinear problems.

EAD 452. PROJECTS LABORATORY. (2) Corequisite: EAD 412 or EAD 415. A project-oriented laboratory course designed to provide the student an opportunity to apply his undergraduate engineering education to practical real world problems.

EAD 481. SWITCHING THEORY AND LOGIC DESIGN II. (3) Prerequisite: EAD 382. A continuation of EAD 382 including sequential circuit synthesis, state assignments, and flow table reduction. Top-down design with stress on engineering considerations and applications.

EAD 482. DIGITAL SYSTEMS THEORY. (3) Prerequisite: EAD 382. The primary emphasis will be on the engineering aspects of digital systems design. Analysis and design of multiplexers, A/D and D/A converters, data communications, and system interfacing. Interrupt generation and processing.

EAD 483. INTRODUCTION TO ENGINEERING SIMULATION. (3) Prerequisite: EAD 381 or consent of instructor. A wide range of simulation-related topics will be introduced, including the theory of simulation, characteristics of current simulators, and trade-offs in simulation studies. This course will cover both continuous and discrete simulation with the primary course emphasis throughout being placed on the application of simulation techniques to engineering problems. Simulation of actual problems from the students' interest and experience areas will constitute a significant portion of the coursework.

EAD 490. SPECIAL TOPICS IN ENGINEERING ANALYSIS AND DESIGN. (Variable credit 1-4 hours. May be repeated for credit.) Prerequisite: consent of the department. The course will build upon and synthesize the knowledge the students have gained from the engineering science, mathematics and physical sciences stem of the core curriculum. The specific topics covered in each separate offering of the course will serve as the vehicle for teaching engineering analysis, synthesis, and design, while simultaneously affording an opportunity for the students to point themselves toward an area of specialization.

EAD 491. UNDERGRADUATE RESEARCH. (Variable credit 1-4 hours. May be repeated for credit.) Prerequisite: consent of the department. This course involves the independent study of a theoretical and/or experimental problem in a specialized area of engineering analysis and design. The student can pursue some particular area or problem to a depth much greater than can be undertaken within the scope of existing courses.

EAD 492. INDIVIDUALIZED STUDY. (Variable credit 1 - 3 hours. May be repeated for credit.) Prerequisite: consent of the department. Supervised individual study within an area of a student's particular interest which is beyond the scope of existing courses.

DEPARTMENT OF ENGINEERING SCIENCE, MECHANICS AND MATERIALS

Chairman: Professor Snyder
Professor: Houghton
Associate Professors: Crippen, Kim, Mohanty
Assistant Professor: Coleman
Visiting Assistant Professor: Flattery
Lecturer: Reddy
Lecturer: (part-time) Gibbon

The engineering sciences are identified as those areas of engineering which emphasize the application of the fundamental principles of the physical sciences to engineering problems. Some classical engineering areas recognized to fall within this field include the thermal and energy sciences, engineering mechanics, engineering materials, electric and magnetic fields and physical electronics.

Using the flexibility provided by the BSE Major Option-Minor Option provisions and with careful planning with his or her engineering career counselor, a student can develop a variety of educational programs which would provide the background for professional engineering licensing and practice in any of the areas included within the general field of engineering science or in one of its specialized areas. A student can also develop an individualized study program in one of the newly emerging interdisciplinary fields involving the merger of engineering and the various science areas, such as biomechanics and biomaterials.

In addition to providing preparation for engineering practice or graduate work in any of the various fields of engineering science, the breadth of topics included within the engineering science courses provides a unique opportunity for the person interested in an exceptionally broad engineering education.

The professional option in Engineering Science, Mechanics and Materials is accredited by the Engineers' Council for Professional Development.

The departmental requirements for the Bachelor of Science in Engineering Degree with a major in Engineering Science, Mechanics and Materials are as follows:

Mathematics Course, 300 level or above	3
Science Elective	3
EAD 211, 212-Linear Networks and Analysis	6
ESM 252-ESM Lab I	1
ESM 312 - Thermodynamics II	3
ESM 321 - EM Fields	3
ESM 322 - EM Waves	3
ESM 341 - Introduction to Solid Mechanics	3
ESM 342 - Introduction to Fluid Mechanics	3
ESM 351 - ESM Lab II	1
ESM 352 - ESM Lab III	1
ESM 361 - Introduction to Engineering Materials	3
ESM 402 - Introduction to Continua	3
ESM 451 - ESM Projects Lab I	1
ESM 452 - ESM Projects Lab II	2
One additional 400-level ESM course	3

For students in the professional option, the minor option and th 400-level ESM elective must contain the equivalent of six hours o content in engineering design, synthesis, systems and/or integra tion of basic material from the several areas of ESM. The scienc elective will normally be chosen from chemistry courses, 200-level o above, or physics beyond 222. If it is consistent with the study plan, student may be allowed to choose the science elective from an are other than physics or chemistry.

CURRICULUM OUTLINE
FOR THE
BACHELOR OF SCIENCE IN ENGINEERING
ENGINEERING SCIENCE, MECHANICS AND MATERIALS

FRESHMAN YEAR

Physics 101	4	Physics 102	
Engineering 101 A	1	Engineering 102 A	
Engineering 101 B	1	Engineering 102 B	
Engineering 101 C	1	Engineering 102 C	
Mathematics 141	4	Mathematics 105	
English 101	3	Mathematics 142	
		Humanities or S.S.	
	14		1

SOPHOMORE YEAR

ESM 241	3	ESM 242	
EAD 211	3	EAD 212	
Mathematics 241	3	Mathematics 271	
Chemistry 101	3	Physics 222	

Chemistry 101L	1	ESM 252	1
Economics 201 or 202	3	Humanities or S.S.	3
	16		16

JUNIOR YEAR

ESM 311	3	ESM 312	3
ESM 321	3	ESM 322	3
ESM 341	3	ESM 342	3
ESM 351	1	ESM 352	1
ESM 361	3	Minor (a)	3
Humanities or S.S.	3	Humanities or S.S.	3
	16		16

SENIOR YEAR

ESM 4xx (b)	3	ESM 402	3
ESM 451	1	ESM 452	2
Minor (a)	3	Minor (a)	3
Minor (a)	3	Minor (a)	3
Mathematics 3xx (c)	3	Science Elective (d)	3
Science Elective (d)	3	Humanities or S.S.	3
	16		17

(a) Minor Option
As outlined in the general uses of the minor option on page 107, the ESM student could use this elective block to (1) obtain some depth within the broad field of engineering science by choosing additional advanced courses from the various engineering sciences; (2) obtain significant depth within a particular area of engineering science through the use of available ESM, science, mathematics and other engineering courses (see attached suggested ESM minor options); (3) obtain a minor specialization in some other engineering or technical department; (4) prepare for graduate work in engineering science, one of its specialized fields, or some other engineering area; or (5) pursue some interdisciplinary or liberal educational interest.

(b) A senior level ESM course elected to complement the student's overall educational objectives.

(c) An advanced applied mathematics course approved by the adviser.

(d) Three credit hours of an approved course from the physical, life or earth sciences complementing the student's overall educational plan satisfy the college degree requirement; the additional three credit hours satisfy departmental science elective requirements described on the previous page.

ENGINEERING SCIENCE, MECHANICS AND MATERIALS

ESM 241. ENGINEERING MECHANICS I. (3) Prerequisite or c requisite: Math 142. The first course of a two-semester sequence i troducing the principles of particle and rigid body mechanics, wit engineering applications. Force systems and resultants. The equ ibrium of particles and rigid bodies. Friction. The kinematics ar kinetics of particles. Work-energy and impulse-momentum pri ciples and conservation laws.

ESM 242. ENGINEERING MECHANICS II. (3) Prerequisit ESM 241. Prerequisite or corequisite: Math 241. Properties of are and volumes. The inertia tensor. Introduction to the dynamics systems of particles and of rigid bodies. Energy and momentu methods. Plane motion of rigid bodies.

ESM 252. ESM LABORATORY I. (1) Prerequisite: EAD 211. Th first of a series of laboratories designed to instruct the student in th use of laboratory equipment and to develop and apply the principl of experimentation and measurement. Three laboratory hours p week.

ESM 281. CONCEPTS OF ENGINEERING MECHANICS. (Prerequisite: Math 103A (plane trigonometry) or equivaler Introduction to the concepts of forces, moments and stresse mechanical properties of materials; mechanical failure and fractu extensions to the behavior of various types of structures. Credits f this course may not be applied to the BSE or BET degrees.

ESM 311. THERMODYNAMICS I. (3) Prerequisites: ESM 241 Physics 221 and Math 271. First and second laws of thermod namics. Work and heat. Thermodynamic probability and entrop Ideal and real gases. Nonreactive mixture of gases. Availability a irreversibility.

ESM 312. THERMODYNAMICS II. (3) Prerequisite: ESM 3 General thermodynamic relations; equations of state and ge eralized charts. Combustion, dissociation and chemical equ brium. Introduction to statistical thermodynamics.

ESM 321. INTRODUCTION TO ELECTROMAGNETIC FIELD (3) Prerequisite: EAD 211. A study of electric and magnetic fie s using the vector formulation. Vector analysis. Electrostatics: p tential functions, dielectrics, capacitance, energy and forces as ciated with electric fields, solution of Laplace's and Poisson's eq tions. Magnetostatics: vector potential functions, Lorentz forc hysteresis, magnetic polarization and induction, and ener Gauss's, Ampere's, Faraday's laws, etc., leading to the Maxwl equations.

ESM 322. ELECTROMAGNETIC WAVES. (3) Prerequisite: ES 321. A study of Maxwell's equations, transmission line theory, pla e

waves in media, propagation of electromagnetic waves in various media. The phenomena of reflection and refraction at interfaces of two dissimilar materials. Guided electromagnetic waves in coaxial cables and waveguides.

ESM 331. INTRODUCTION TO ELECTRONIC MATERIALS. (3) Prerequisite: Physics 222 or 231. A survey of important classes of electronic materials and devices with examples from crystalline and amorphous semiconductors, junction and MOS devices, thermoelectrics, lasers and superconductors. Introduction to the quantum mechanics of electrons in solids, electron-atom interactions and energy band model, providing a basis for rationalizing a wide variety of electronic properties.

ESM 341. INTRODUCTION TO SOLID MECHANICS. (3) Prerequisite or corequisite: ESM 242, or prerequisite: ESM 241 and Math 241. An introduction to the engineering theory of deformable solids and its applications. Stress and deformation resulting from axial, torsion, and bending loads. Shear and moment diagrams. Mohr's circle for stress and strain, and buckling of columns. Inelastic behavior is considered as well as time and temperature effects.

ESM 342. INTRODUCTION TO FLUID MECHANICS. (3) Prerequisite: ESM 241 and Math 241. A first course in fluid mechanics introducing the basic concepts of a fluid and the fundamentals of ideal and real fluid flow. Topics covered include fluid statics, conservation principles, Bernoulli's equation, fluid flow in pipes, and measurement devices.

ESM 351. ESM LABORATORY II. (1) Prerequisite: junior standing in ESM. Laboratory experiments and development of basic experimental techniques necessary in the areas of engineering science, mechanics and materials. Three laboratory hours per week.

ESM 352. ESM LABORATORY III. (1) Prerequisite: ESM 351. Basic electronic principles, signal measuring, generating and recording devices; static and dynamic measurements; calibration of measuring devices. Three laboratory hours per week.

ESM 361. INTRODUCTION TO ENGINEERING MATERIALS. (3) Prerequisites: Chemistry 101 and Math 142. Classifications of engineering materials. Introduction to property/structure relationships. Ideal and defect atomic structures of solids with examples from metals, ceramics and polymers. Cold working and annealing effects. Phase equilibria in alloys; introduction to diffusional processes and transformation kinetics.

ESM 362. MECHANICAL BEHAVIOR AND STRENGTHENING OF SOLIDS. (3) Prerequisite: Chemistry 101, prerequisite or corequisite: ESM 341. Mechanical properties of materials including elastic behavior, plastic flow, fracture, creep, fatigue, elevated temperature effects. Correlation of properties with atomic and microscopic structure. Dislocation theory and its application to

mechanical behavior and strengthening mechanisms. Alloy hard
ening effects; effects of processing and heat treatments. Applica
tions in Fe-C alloys.

ESM 402. INTRODUCTION TO CONTINUA. (1) Prerequisites
ESM 311, 321, 341, 342. A unified treatment of those topics which ar
common to all continua. Stress, deformation and velocity fields, con
stitutive equations and field equations. Representative applica
tions in solid, fluid and electromagnetic continua, including in
teraction problems.

ESM 411. HEAT TRANSFER. (3) Prerequisites: ESM 311 and 342
Steady and unsteady state heat conduction, forced and natural hea
convection principles, radiative heat transfer, heat exchangers.

ESM 412. ENERGY CONVERSION I. (3) Prerequisites: ESM 31
and 342. Application of principles of thermodynamics, fluid flo
and heat transfer to internal combustion engines, compressors, tu
bines, heat exchangers, refrigeration, and cryogenics.

ESM 413. ENERGY CONVERSION II. (3) Prerequisite: ESM 31
Study of conversion of heat into power. Thermoelectric, magnet
hydrodynamic engines, thermionic converters, solar and fuel cell

ESM 414. DYNAMICS AND THERMODYNAMICS OF COM
PRESSIBLE FLOW. (3). Prerequisites: ESM 311 and 342. Compre
sible flow equations, isentropic flow, normal shock waves. Fann
and Raleigh line flows. Nonsteady one dimensional flow.

ESM 422. ANTENNAS. (3) Prerequisite or corequisite: ESM 322.
study of radiation into free space, the point source, thin linea
antenna, arrays of linear elements, aperture antennas, impedanc
methods of feeding, matching and termination. A survey of variou
antenna systems.

ESM 426. ACOUSTICS. (3) Prerequisite or corequisite: ESM 322 c
Physics 331. Vibrations and simple vibrating systems; radiatin
systems; plane waves of sound; dynamic analogies, microphone
and other acoustic transducers; acoustic measurements.

ESM 431. PHYSICAL ELECTRONICS. (3) Prerequisite: ESM 32
or Physics 331. Dynamics of charged particles; electron motion i
electromagnetic fields; types of electron emission; beam focusin
longitudinal and transverse beam waves; microwave generatio
plasma parameters.

ESM 432. QUANTUM AND PARAMETRIC ELECTRONICS. (
Prerequisites: ESM 322 or Physics 331. Introduction to the concep
of quantum mechanics; spin energy levels; elementary maser
optical resonance; traveling wave tubes; backward wave oscillator

ESM 434. SOLID STATE ELECTRONICS. (3) Prerequisite: ESI
321 or ESM 331 or Physics 241 or consent. Electron theories of solid

Quantum mechanical foundations. Free electron and band models. Electron transport processes in metallic and nonmetallic conduction; diffusion and drift phenomena. Theory of semiconductors.

ESM 441. INTERMEDIATE SOLID MECHANICS. (3) Prerequisite: ESM 341. More advanced treatment of the topics covered in ESM 341. Included are failure theories, energy methods, plane stress—plane strain analysis, torsion of prismatic bars, curved beams, etc.

ESM 442. INTERMEDIATE FLUID MECHANICS. (3) Prerequisites. ESM 311 and 342. A continuation of ESM 342. Topics covered include boundary layers, flow over body surfaces, compressible flow, potential flow, turbomachinery and propulsion devices.

ESM 443. EXPERIMENTAL STRESS ANALYSIS. (3). Two lectures and a two-hour lab per week. Prerequisite: ESM 341. Theoretical and experimental techniques of stress and strain analysis, with experimental emphasis on strain gages and instrumentation. Brittle coatings and photoelasticy are also considered.

ESM 444. INTERMEDIATE DYNAMICS. (3) Prerequisite: ESM 242 and Math 271. Further studies in the dynamics of particles and rigid bodies, with engineering applications. An introduction to Lagrange's equations of motion. Multi-degree-of-freedom vibrations.

ESM 451. ESM PROJECTS LABORATORY I. (1) Prerequisite: senior standing in ESM. The first of a two-semester sequence leading to a major laboratory project or design project involving integration of the various areas of engineering science. The student is responsible for conceiving the project, planning the work schedule, conducting the work, and writing a final report.

ESM 452. ESM PROJECTS LABORATORY II. (2) Prerequisite: ESM 451. Continuation of ESM 451.

ESM 461. SOLID STATE TRANSFORMATIONS. (3) Prerequisite: ESM 361. Thermodynamics, morphology and kinetics of solid state transformations. Diffusion and absolute reaction rate theory; crystallographic nature of phase transformations; nucleation and growth processes; precipitation and oxidation reactions.

ESM 462. MATERIALS PRODUCTION AND PROCESS. (3) Prerequisite or corequisite: ESM 361. Applications of thermodynamics and chemistry to extractive and process metallurgy. Fundamental principles of materials forming operations. Casting, mechanical working and joining methods.

ESM 464. DIFFRACTION AND SPECTROSCOPIC STUDIES OF MATTER. (3) Prerequisite: senior standing in engineering or science and consent of instructor. Atomic arrangements in crystalline and non-crystalline forms of matter. Symmetry properties of crystals and correlations with anisotropic physical properties. X-ray

diffraction and spectroscopic analysis of matter. Theoretical an practical aspects of determining atomic and molecular arrange ments in solids and fluids. Energy dispersive and nondispersiv spectroscopic methods. Discussions of specific structures and tech niques of current interest with examples drawn from polymeric biological, metallic and non-metallic areas.

ESM 490. SPECIAL TOPICS IN ENGINEERING SCIENCE MECHANICS AND MATERIALS. (Variable credit 1-4 hours. Ma be repeated for credit.) Prerequisite: consent of the department. Th course will build upon and synthesize the knowledge the student have gained from the engineering science, mathematics an physical sciences stem of the core curriculum. The specific topic covered in each separate offering of the course will serve as th vehicle for teaching engineering analysis, synthesis and design while simultaneously affording an opportunity for the students t point themselves toward an area of specialization.

ESM 491. UNDERGRADUATE RESEARCH. (Variable credit 1- hours. May be repeated for credit.) Prerequisite: consent of the d partment. This course involves the independent study of theoretical and/or experimental problem in a specialized area o engineering science, mechanics and materials. The student ca pursue some particular area or problem to a depth much greater tha can be undertaken within the scope of existing courses. The topics o the investigation may originate from the student or from the facult member who will supervise the study.

ESM 492. INDIVIDUALIZED STUDY. (Variable credit 1-3 hours May be repeated for credit.) Prerequisite: consent of the departmen Supervised individual study within an area of a student's particula interest which is beyond the scope of existing courses.

DEPARTMENT OF
URBAN AND ENVIRONMENTAL ENGINEERING

Chairman: Professor Kin
Professor: Celanese Professor of Civil Engineering Be
Associate Professors: Bayer, Evet
Assistant Professor: Zulfaca
Lecturers (part-time): Browning, Sills, Smit

One of the major thrusts of the University of North Carolina a Charlotte is the establishment of ways in which urban problems ca be identified and solutions found. The College of Engineering has i turn initiated a program in which urban and environmental aspect of engineering are emphasized. Traditionally many of thes concerns have been treated within civil engineering, and all of th civil engineering courses at UNCC have been continued within th Department of Urban and Environmental Engineering. In the cu riculum, urban and environmental issues are the bases used fc example problems, for student exercises, and for independent stud projects. In this department, the candidate for the degree of Bach

or of Science in Engineering may take a curriculum that prepares him or her to become a professional civil engineer upon completion of legal requirements as specified by the individual states.

The urban and non-urban problems of the environment can neither be distinctly separated, nor dealt with independently. The traditional functions of civil engineers to provide buildings and bridges, dams, harbors and canals, railroads and other facilities must be continued, while at the same time the urgent problems of the environment are assessed and solved. Thus, the department emphasizes urban problem areas associated with structural engineering, transportation engineering, and environmental engineering. For example, more emphasis is given to metropolitan traffic, while concern is continued in the area of interstate highways; and more emphasis is given to water pollution problems while continuing the study of water resource systems and the building of water delivery systems for an increasing population.

Some students will wish to plan early in their undergraduate careers for continuation of their engineering studies beyond the first degree. The large number of fields of graduate study which can logically follow the curriculum offered by the Department of Urban and Environmental Engineering may influence how each student plans his program of study. The minor option sequence allows flexibility for concentration in specific areas and each student will design his minor option program with his adviser in order to achieve his individual goal.

The professional option in Urban and Environmental Engineering is accredited by the Engineering Council for Professional Development.

The 42 hours of departmental requirements for UEE are:

CHE 102L - Principles of Chemistry Laboratory	1
EAD 258 - Basic Electrical Engineering Laboratory	1
EAD 268 - Basic Electrical Engineering	3
ESM 341 - Mechanical Behavior of Solids	3
ESM 342 - Fluid Mechanics	3
UEE 261 - Surveying	3
UEE 321 - Structural Analysis	3
UEE 341 - Environmental Engineering I	3
UEE 355 - Laboratory I	1
UEE 356 - Laboratory II	1
UEE 361 - Transportation Engineering I	3
UEE 421 - Structural Steel Design I	3
UEE 425 - Reinforced Concrete Design I	3
UEE 455 - Laboratory III	1
UEE 456 - Laboratory IV	1
UEE 468 - Geotechnical Engineering	3
UEE 471 - UEE Systems and Design I	3
UEE 472 - UEE Systems and Design II	3
	42

The professional curriculum emphasizes selection of engineering, scientific or mathematics in the five Minor Option courses. Those who instead take these options in the social and behavioral sciences receive a degree having the liberal option curriculum.

CURRICULUM OUTLINE
FOR THE
BACHELOR OF SCIENCE IN ENGINEERING

URBAN AND ENVIRONMENTAL ENGINEERING

The suggested order for taking courses is:

FRESHMAN YEAR

Physics 101	4	Physics 102	
Engineering 101A	1	Engineering 102A	
Engineering 101B	1	Engineering 102B	
Engineering 101C	1	Engineering 102C	
English 101	3	Mathematics 141	
UEE 261	3	Mathematics 105	
Humanities or S.S.	3	Humanities or S.S.	
	16		

SOPHOMORE YEAR

Math 142	4	ESM 242	
Chem 101	3	Math 241	
Chem 101L	1	Chem 102	
ESM 241	3	Chem 102L	
EAD 258	1	Eco 202/201	
EAD 268	3	Humanities or S.S.	
	15		

JUNIOR YEAR

Mathematics 271	3	ESM 342	
ESM 341	3	Phy 222	
UEE 321	3	UEE 356	
UEE 341	3	Minor	
UEE 355	1	Minor	
UEE 361	3	Humanities or S.S.	
	16		

SENIOR YEAR

ESM 311	3	UEE 456	
UEE 421	3	UEE 468	
UEE 425	3	UEE 472	
UEE 455	1	Minor	

UEE 471	3	Minor	3
Humanities or S.S.	3	Minor	3
	16		16

COURSE DESCRIPTIONS

URBAN AND ENVIRONMENTAL ENGINEERING

Structural Engineering

UEE 281. CONCEPTS OF STRUCTURAL ENGINEERING I. (3) Prerequisite: Mathematics 100 or Computer Science 100. For students not majoring in engineering or technology. A brief introduction to structural materials and the concepts of stress and strain as applied to structures; structural statics; beams and columns; laboratory demonstrations and class problems.

UEE 282. CONCEPTS OF STRUCTURAL ENGINEERING II. (3) Prerequisite: UEE 281. A continuation of UEE 281 involving more complex structures; interconnected beams and columns; steel and reinforced concrete; buildings and bridges; arches, plates and shells; live loads, wind loads, and earthquake effects; laboratory demonstrations and class problems; computer applications in structural problems.

UEE 321. STRUCTURAL ANALYSIS. (3) Prerequisite: ESM 241. Analysis of statically determinate and indeterminate beams, trusses and frames under fixed and moving loads to include shear and moment diagrams, rough deflected shapes and deflections. Influence lines and criteria for moving loads. Indeterminate analyses to include methods of slope deflection, moment area, moment distribution and conjugate beams.

UEE 421. STRUCTURAL STEEL DESIGN I. (3) Prerequisites: UEE 321 and ESM 341. Analysis and design of structural steel components with emphasis on the fundamental theories necessary for a thorough understanding of the design procedure. Individual members are considered, including pure tension, pure compression, uniaxial and biaxial bending and combined bending and axial stresses. Current AISC Specifications used.

UEE 422. STRUCTURAL STEEL DESIGN II. (3) Prerequisite: UEE 421. Analysis and design of structural steel systems with emphasis on the fundamental theories necessary for a thorough understanding of the design of complete structures. Welded, riveted and bolted connections. Design of steel buildings, composite design, built-up beams and plate girders. Plastic analysis and design. Emphasis to be placed on various topics partially dependent upon student interest and goals. Current AISC Specifications used.

UEE 424. ADVANCED STRUCTURAL ANALYSIS. (3) Prerequisites: UEE 321. A continuation of UEE 321. Fundamental and

special methods of analysis of statically determinate and ind terminate structures. Topics include deflection theory, energ theory, variable cross-section analysis, multistory moment distrib tion.

UEE 425. REINFORCED CONCRETE DESIGN I. (3) Pr requisites: UEE 321 and ESM 341. Analysis and design of reinforce concrete components with emphasis on fundamental theorie Mechanics and behavior of reinforced concrete. Flexural membe to include singly and doubly reinforced beams of various cro sections (rectangular, T-beams, joists, one-way slabs and other Shear in beams and columns. Short columns to include uniaxi and biaxial bending. Construction of short column interactio diagrams. Introduction to footings. Current ACI Specification used.

UEE 426. REINFORCED CONCRETE DESIGN II. (3) Prere uisite: UEE 425. Analysis and design of reinforced concre components and systems with emphasis on the fundamenta theories necessary for a thorough understanding of concre structures. Concentrically loaded slender columns, slender colum under compression plus bending. Footings and retaining walls. Co tinuous beams and frames. Buildings and bridges. Precast an prestressed concrete. Emphasis to be placed on various topi partially dependent upon student interest and goals. Current AC Specifications used.

UEE 428. MATRIX METHODS OF STRUCTURAL ANALYSI (3) Prerequisites: UEE 321 or consent of instructor. Flexibili method of analysis for planar structures. Stiffness method analysis for planar orthogonal, planar non-orthogonal and three-d mensional structures with emphasis on computer applications.

UEE 455. LABORATORY III. (1) Prerequisites or corequisite UEE 421 and UEE 425. Design of concrete mixes; testing standard concrete cylinders, beams and columns. Testings of ste tensile members and beams. Analysis and design of simp structural systems. Three laboratory hours per week.

Environmental and Water Resources Engineering

UEE 341. ENVIRONMENTAL ENGINEERING I. (3) Admi sion by consent of instructor. Theory of supply, transmission an distribution of water; collection of waste-water; water quality theory and design of water and waste-water treatment processes

UEE 342. ENVIRONMENTAL ENGINEERING II. (3) Prer quisite: UEE 341. A continuation of UEE 341. Industrial waste stream and reservoir pollution abatement; river basin and estu rine studies; solid waste disposal and ground water pollution; a pollution sources, dispersion, and deposition; environmental effect of radioactivity.

UEE 355. LABORATORY I. (1) Prerequisite or corequisite; UEE 341. Laboratory problems in environmental engineering. Emphasis on analysis and presentation of results as well as on the significance of results as they affect theory and/or practice. Three laboratory hours per week.

UEE 444. ENGINEERING HYDROLOGY. (3) Admission by consent of instructor. A quantitative study of the various components of the water cycle, including precipitation, runoff, ground water flow, evaporation and transpiration, stream flow. Hydrograph analysis; flood routine; frequency and duration; reservoir design.

UEE 446. ENGINEERING HYDRAULICS. (3) Prerequisites: ESM 342. Problems of fluids as applied in civil engineering; open channel flow; dams and spillways; water power; river flow and backwater curves; pipe networks, fire flow, sewage collection, groundwater; computer applications pertaining thereto.

Transportation and Geotechnical Engineering

UEE 261. SURVEYING. (3) Admission by consent of instructor. Elements of plane surveying including taping, transit, level, stadia, plane table, topographic surveying and mapping, care and adjustment of instruments; error adjustments; area and earthwork computations; introduction to photogrammetry; computer techniques. Periods of laboratory, lecture and field work will be scheduled.

UEE 356. LABORATORY II. (1) Prerequisite: UEE 361. Design of basic highway configurations involving route layout, geometric design, and earthwork operations. Three laboratory hours per week.

UEE 361. TRANSPORTATION ENGINEERING I. (3) Admission by consent of instructor. Development of transportation facilities; planning, location and economic considerations, with special emphasis on land transportation.

UEE 362. TRANSPORTATION ENGINEERING II. (3) Prerequisite: UEE 361. Urban transportation considerations: travel characteristics of urban transportation systems; analysis of transportation-oriented studies; analytic methods of traffic distribution and assignment; urban layout and growth patterns.

UEE 456. LABORATORY IV. (1) Prerequisites or corequisites: ESM 341 and UEE 468. Demonstrations and experiments verifying theoretical bases of geotechnical engineering; cohesionless and cohesive soils. Three laboratory hours per week.

UEE 464. TRAFFIC ENGINEERING. (3) Prerequisite: UEE 361. Characteristics of vehicles and vehicle operators; investigative studies in traffic engineering; planning and implementation of

traffic control devices; design of parking facilities; implications o traffic engineering decisions.

UEE 468. GEOTECHNICAL ENGINEERING. (3) Prerequisit ESM 341. Theoretical bases of geotechnical engineering to includ shear, stress and strain in soils and failure of soils; foundation permeability and pore pressure; retaining structures, slope stabilit and earth dams; soil-structure interaction; soil dynamics; liqu faction; earthquake effects.

Urban Engineering, Design Engineering and Special Topics

UEE 412. COMPUTER APPLICATIONS IN URBAN AND EN VIRONMENTAL ENGINEERING. (3) Senior standing in eng neering. The application of the digital computer to various types o urban and environmental engineering problems. Examinations i depth of selected urban and environmental engineering problem

UEE 432. URBAN ENGINEERING. (3) Admission by consent o instructor. An examination of those societal problems of metr politan regions most amenable to engineering solutions. Currer urban literature will be reviewed in seminar, and selected topi amenable to engineering analysis will be studied. Written repor will be presented.

UEE 471. UEE SYSTEMS AND DESIGN I. (3) Admission by co sent of instructor. Introduction to systems engineering as applied t urban and environmental engineering problems. Organization o "consulting engineering companies" for preliminary plannin information gathering and data analysis on a specific urban an environmental engineering problem area chosen for each clas Assignment and scheduling of tasks resulting in contracts to b completed in UEE 472.

UEE 472. UEE SYSTEMS AND DESIGN II. (3) Admission b consent of instructor. Completion of "consulting engineerin company contracts" established in UEE 471, resulting in a compr hensive written report and verbal presentation to the College Engineering faculty and practicing engineers.

UEE 490. SPECIAL TOPICS IN UEE. (Variable credit 1-4 hour May be repeated for credit.) Prerequisite: senior standing in UE This course will be devoted to specific new areas which are emergin in the various fields of urban and environmental engineering. Give at the senior level, the course will build upon and synthesize th knowledge the students have gained from the engineering scienc mathematics and physical sciences stems of the core curriculum

UEE 491. UNDERGRADUATE RESEARCH IN UEE. (Variab credit 1-4 hours. May be repeated for credit.) Prerequisite: consent department. This course involves the independent study of a th oretical and/or experimental problem in a specialized area of UE

The student can pursue some particular area or problem to a depth much greater than can be undertaken within the scope of existing courses. The topics of the investigation may originate from the student or from the faculty member who will supervise the study.

UEE 492. INDIVIDUALIZED STUDY. (Variable credit 1-3 hours. May be repeated for credit.) Prerequisite: consent of the department. Supervised individual study within an area of a student's particular interest which is beyond the scope of existing courses.

DEPARTMENT OF ENGINEERING TECHNOLOGY

Chairman: Associate Professor Phelps
Associate Professors: Christie, Grant, Elliott, Liu
Assistant Professors: Brown, Mobley, Priebe, Sheppard Wang, Willis, Young
Lecturers: (part-time) Chatterjea, Hayes, Klontz, Mills, Morris, Petty, Powers, Ramirez, Rehn, Whisenant, Wilkinson

Engineering and technical education have undergone considerable change in the last 25 years. The complexities of space exploration, nuclear power, communications systems, environmental control, information processing, transportation systems, etc. have demanded a great increase in the involvement of professional engineers in theoretical and analytical work. This has resulted in a much greater emphasis upon research and development, science and mathematics in professional engineering curricula.

At the same time, after the more complex devices and systems have been engineered, their design, development and operation require the sophisticated knowledge and skills of practitioners of what might be called the "applied engineering sciences." Programs dedicated to fulfilling this urgent need are now developing rapidly over the United States. The aim and content of these programs are distinctly different from professional engineering curricula.

To provide the appropriate distinction from both the theoretical-professional engineers and from the engineering technicians who are graduated from the two-year technical institutes, the designation "engineering technologist" is being used throughout the United States for the graduates of four-year applied engineering or "engineering technology" curricula.

The two-year technical institute programs in North Carolina and in many other states provide excellent foundation for engineering technology curricula. Therefore, the engineering technology program at the University of North Carolina at Charlotte is limited to the junior and senior years, and an Associated in Applied Science degree is required for admission.

Each of the following Baccalaureate Engineering Technology curricula is accredited by the Engineer's Council for Professional Development:

Civil Engineering Technology
Computer/Electronic Engineering Technology
Mechanical Engineering Technology

The ECPD is recognized by the National Commission o Accreditation as the appropriate accrediting agency of both Eng neering and Engineering Technology curricula.

Requirements for the Degree of Bachelor of Engineering Technolog

Residence

The residence requirements for the Bachelor of Engineerin Technology degree at the University of North Carolina at Charlot specifies that the last 30 semester hours of credit must be earned a UNCC and that the last 12 semester hours of work in the student major field must be earned at this University.

Scholastic

A minimum level of scholastic achievement is required of a students in order to continue as a degree candidate (see Requir ments for Continued Enrollment listed in the Academic Regulatior for College of Engineering majors). In order to be eligible for th B.E.T. degree, a minimum Quality Point Average (QPA) of 2.00 o all courses attempted at UNCC is required. In addition, a minimu QPA of 2.00 on all courses attempted in the College of Engineering required.

Course Requirements

Prerequisite courses for entering the Engineering Technolog program normally taken at a technical institute or junior college, a listed on pages 136 and 137.

In addition, the following UNCC courses are required for th B.E.T. degree:

Title	*Semester Hours*
Chemistry 101 (or other Natural Science)	3*
Computer Science 100	3
Economics 201 or 202	3
Humanities or Social Science Electives	12
Free Electives	3
Major Electives	6*
Engineering Analysis	6*
Specified courses in major area of study	28*
Total	64
Transfer credit for A.A.S. degree	64
Total number of semester hours required for B.E.T. degree	128

*Differences exist for CET curriculum

Requirements for Admission

A student who has graduated from a technical institute or the technical division of a junior college and who wishes to enter the Engineering Technology program at UNCC must meet the following requirements:

1. Having an Associate in Applied Science degree in one of the following fields:

   Civil, Construction, Electronic or Mechanical Engineering Technology, Design and Drafting Technology, or in Industrial Engineering Technology.

2. Have an overall quality-point average of at least 2.20 (based on the 3.0 system) on all courses taken at the technical institute, and

3. Have satisfactorily completed the prerequisite courses for the option which he plans to enter (see below).

There is considerable variance in the contents of technical institute programs throughout the United States. Should this result in entrance deficiencies, the student can usually remove these deficiencies at Central Piedmont Community College in Charlotte prior to admission to UNCC, or during his first year at UNCC.

Background Courses Required for Entering the Bachelor of Engineering Technology Program

The student must have satisfactorily completed the following subjects in his two-year associate degree program.

Quarter hours indicated are minima.

Descriptive Title	*Quarter Hours*
English Composition, Technical Writing and/or Public Speaking	9
Algebra, Trigonometry and Analytic Geometry with Calculus	13
*Differential and Integral Calculus	5
General Physics (with Laboratory)	8
*Physics or Chemistry (with Laboratory)	4
*Humanities or Social Sciences	6
*Non-technical Subjects	3
Technical Courses in Major Area	48**
Total	96

**The 48 hours of major work must include courses covering all of the subjects in any one of the areas shown on the following page.

*These courses can be taken at UNCC

Electrical
Drafting
D.C. Circuits
A.C. Circuits
Electronic Instruments and Measurements
Vacuum Tubes & Transistors
Transistor Amplifiers and Circuits
Pulse (Wave-shaping) Circuits
Communication Electronics or Control Systems

Civil
Drafting
*Surveying
Statics
Strength of Materials
*Properties of Concrete

Mechanical
Drafting
Machine Processes
Statics
Machine Design or Design Drafting
*Metallurgy
Strength of Materials

Construction (Emphasis of Civil)
Architectural Drafting
Architectural Engineering Materials and Methods
*Surveying
Construction Estimates and Costs
Codes, Contracts, and Specifications
*Properties of Concrete

Industrial (Emphasis of Mechanical)

Drafting
Production Planning
Work Measurement, or Time in Motion, or Methods Analysis

CURRICULUM REQUIREMENTS FOR THE BACHELOR OF ENGINEERING TECHNOLOGY DEGREE

Civil Engineering Technology

An ECPD Accredited Baccalaureate Engineering Technology Curriculum

JUNIOR YEAR

CET 311	3	CET 312	3
CET 321	3	CET 332	3
CET 351	1	CET 352	1
ET 370	3	ET 371	3
CSC 100	3	ECON 202 or 201	3
CHE 101 or E.S. 102**	4	Humanities or Social Science Electives (b)	3
	17		16

*These courses can be taken at UNCC

**Students who are primarily interested in environmental technology must take Chemistry 101. Those who are primarily interested in construction must take Earth Science 102

SENIOR YEAR

CET 411	3	CET 462	3
CET 441	3	Major Elective (c)	6
ET 473	3	Humanities or Social Science Elective (b)	3
Major Elective (c)	1	Free Elective (d)	3
Humanities or Social Science Elective (b)	3		
Humanities or Social Science Elective (b)	3		
	16		15

Land Surveying Emphasis of Civil Engineering Technology

The curriculum in Civil Engineering Technology which includes not less than six semester hours of surveying subjects (CET 472 and CET 473) is accredited by the North Carolina State Board of Registration for Professional Engineers and Land Surveyors, and such curriculum will be accepted as credit for four years of land surveying experience towards the registration requirements of this board.

CIVIL ENGINEERING TECHNOLOGY
CONSTRUCTION ENGINEERING TECHNOLOGY EMPHASIS

JUNIOR YEAR

CET 311	3	CET 312	3
CET 321	3	MET 481	3
ET 370	3	ET 371	3
CSC 100	3	ECON 202 (or 201)	3
ES 102	4	Humanities or Social Science Elective (b)	3
	17		15

SENIOR YEAR

CET 411	3	CET 412	3
CET 481	3	Major Elective (c)	6
ET 482	3	Humanities or Social Science Elective (b)	3
CET 353	1	Free Elective	3
Humanities or Social Science Elective (b)	3	Major Elective (c)	1
Humanities or Social Science Elective (b)	3		
	16		16

Electrical Engineering Technology
Computer/Electronics Engineering Technology Option

An ECPD Accredited Baccalaureate
Engineering Technology Curriculum

JUNIOR YEAR

EET 351	1	EET 311	
EET 381	3	EET 312	
ET 371*	3	EET 382	
CSC 100	3	ET 471	
CHE 101 (a)	3	Humanities or Social Science Elective (b)	
ECON 201 (or 202)	3	EET	
	16		1

SENIOR YEAR

EET 481	3	EET 412	
EET 452	1	EET 451	
EET 411	3	Humanities or Social Science Elective (b)	
EET 385	3	Humanities or Social Science Elective (b)	
Major Elective	3	Major Elective (e)	
Humanities or Social Science Elective (b)	3	Free Elective (d)	
	16		1

Mechanical Engineering Technology

An ECPD Accredited Baccalaureate
Engineering Technology Curriculum

JUNIOR YEAR

MET 311	3	MET 312	
MET 331	3	MET 322	
MET 351	1	MET 352	
ET 371*	3	ET 471	
CSC 100	3	ECON 202 (or 201)	
CHE 101 (a)	3	Humanities or Social Science Elective (b)	
	16		1

* For students who do not have a strong background in algebra and trigonometry, it is recommended that ET 370 be taken prior to ET 371. This should be taken during the summer preceding his regular first semester if the student plans to complete his program in two years.

SENIOR YEAR

MET 411	3	MET 452	1
MET 341	3	MET 462	3
MET 453	1	MET 472	3
Major Elective (c)	3	Major Elective (c)	3
Humanities or Social Science Elective (b)	3	Humanities or Social Science Elective (b)	3
Humanities or Social Science Elective (b)	3	Free Elective (d)	3
	16		16

Mechanical Engineering Technology
Industrial Engineering Technology Emphasis

JUNIOR YEAR

ET 371*	3	MAT 122	3
MET 311	3	MET 322	3
CSC 100	3	MET 353	1
IET 311	3	MET 312	3
IET 351	1	ECON 201/202	3
Humanities or Social Science Elective	3	Humanities or Social Science Elective	3
	16		16

SENIOR YEAR

IET 431	3	GGY 313	3
MAT 311	3	IET 412	3
IET 411	3	IET 452	1
IET 421	3	Major Elective	3
IET 451	1	Humanities or Social Science Elective	3
Humanities or Social Science Elective	3		
	16		16

Notes

(a) A student who has previously taken a college-level course in general chemistry shall substitute for this requirement another course in chemistry, physics, biology, or earth science 101, 341 or 344, or an approved course in physics, as shown in the table below.

Students who have previously taken	*Shall take at UNCC*
3 quarters of physics and no chemistry	Chemistry 101

*For students who do not have a strong background in algebra and trigonometry, it is recommended that ET 370 be taken prior to ET 371. This should be taken during the summer preceding his regular first semester if the student plans to complete his program in two years.

2 quarters of physics and 1 quarter of chemistry	Physics 102 (Physics 101 with permission)
3 quarters of physics and at least 1 quarter of chemistry (4 qtr. hrs.)	Earth Science 101 or 102, Biology 101, or Physics 103

(b) Humanity and social science elective must be selected from a current list of approved courses which is maintained in the departmental office and shall include a minimum of one 200 and one 300-level course. A coherent plan of study covering all elective courses must be submitted by the student and approved by his adviser before the student enrolls in his first H/SS elective.

(c) Major electives must be 300 or 400-level courses related to the student's field of specialization, or 300 or 400-level course in business administration.

(d) Free electives are intended to provide the student an opportunity to take an additional departmental major course, to investigate other areas of interest outside the College of Engineering, to support an upper-division sequence in the humanities or social science, or to study a foreign language.

Courses selected as free electives should normally be 200-level or higher and must be approved by the student's adviser after the student has outlined the sequence of electives that the student plans to pursue. No course may be taken for elective credit that covers material for which the student has received credit in another course. A maximum of three semester hours credit is allowed in physical education.

COURSE DESCRIPTIONS

Engineering Technology

An engineering technology course may be used for elective or minor credit by a student in another major only with the prior approval of the student's major department and the Department of Engineering Technology.

ET 370. BASIC ENGINEERING ANALYSIS. (3) Prerequisite: college algebra, trigonometry and analytic geometry. A course designed to give students intensive practice in the methods of solving engineering problems which require a knowledge of algebra, determinants, trigonometry and analytic geometry.

ET 371. ENGINEERING ANALYSIS I. (3) Prerequisite: differential and integral calculus. Methods of solving engineering problems which involve the differentiation and integration of algebraic, trigonometric and logarithmic functions; use of integral tables.

ET 471. ENGINEERING ANALYSIS II. (3) Prerequisite: ET 371. A study of constant coefficient linear differential equations, including nonhomogeneous equations; Laplace transforms and the use of Laplace transform tables; applications to the analysis of dynamic systems.

ET 473. ENGINEERING ANALYSIS III. (3) Prerequisite: CSC 100 and ET 371. An introduction to elementary numerical methods which are useful in the solution of engineering problems on the digital computer. Emphasis is placed on applications to civil engineering technology.

ET 481. COMPUTER GRAPHICS TECHNOLOGY. (3) A study of the use of computer graphics as a design drafting tool. The course will utilize computer driven plotters and digitizer to prepare engineering drawings and illustrations.

ET 482. PROJECT MANAGEMENT TECHNOLOGY. (3) Use of CPM and PERT network analysis for planning, managing and controlling projects.

ET 490. SPECIAL TOPICS IN ENGINEERING TECHNOLOGY. (Variable credit, 1-4 hours. May be repeated for credit.) Prerequisite: senior standing in Engineering Technology or consent of the department. This course will be devoted to specific new areas which are emerging in the various fields of engineering technology. Given at the senior level, the course will build upon the knowledge the students have gained from their engineering technology curriculum.

Civil Engineering Technology

CET 250. PROPERTIES OF MATERIALS. (1) Laboratory testing of concrete, metal and wood materials. Emphasis on the development and analysis of stress-strain characteristics, using ASTM specifications with regard to testing procedures. Three laboratory hours per week. No credit toward degree requirements for Engineering Technology majors.

CET 311. STRUCTURAL ANALYSIS I. (3) Prerequisite: elementary courses in statics and strength of materials. Prerequisite or corequisite: ET 370. An introduction to the basic concepts and principles of structural analysis relating to beams, trusses and frame structures. Analysis of statically determinate structures under fixed and moving loads; influence lines for moving loads. Deflection of structures. Emphasis on practical aspects of structural analysis.

CET 312. STRUCTURAL ANALYSIS II. (3) Prerequisite: CET 311. Analysis of statically indeterminate structures using the method of three-moments, methods of least work, method of slope deflection and the moment-distribution method. An introduction to matrix methods of structural analysis.

CET 321. FOUNDATIONS AND EARTHWORK. (3) Prerequisite or corequisite: ET 370. A study of the basic design and construction of foundations. The background theories are generally introduced in concise forms as formulas or charts. Emphasis on practical aspects of foundation design and earthwork construction.

CET 332. HYDRAULICS. (3) Prerequisite or corequisite: ET 370. A study of the fundamental principles of hydraulics and their applications in engineering practice, including the fundamentals of fluid flow through orifices, tubes and pipes, in open channels, and over weirs.

CET 351. SOIL TESTING LABORATORY. (1) Prerequisite or corequisite. CET 321. A laboratory designed to familiarize the student with the common laboratory soil tests and analysis procedures with emphasis on the significance of the various tests, the testing procedures and the detailed computations.

CET 352. HYDRAULICS LABORATORY. (1) Prerequisite or corequisite: CET 332. Verification of some of the principles of hydraulics relating to fluid flow through orifices, tubes and pipes, in open channels, and over weirs.

CET 353. CONSTRUCTION SCHEDULING LABORATORY. (1) Prerequisite or corequisite: ET 482. A laboratory study of construction planning equipment and methods. Emphasis will be placed on the student's understanding of the applications of the techniques being taught in ET 482. Three laboratory hours per week.

CET 411. REINFORCED CONCRETE DESIGN. (3) Prerequisite: CET 312. Design of rectangular beams, T-beams, columns, reinforced concrete floor systems and reinforced concrete footings, according to the ACI code.

CET 412. STRUCTURAL STEEL DESIGN. (3) Prerequisite: CET 312. Design of beams and columns, floor framing, tension and compression members, riveted and welded connections, and plate girders according to AISC specifications.

CET 413. WOOD STRUCTURAL TECHNOLOGY. (3) Prerequisite: CET 311. Design of floors, beams, columns and trusses of both solid and glued laminated wood; includes wood joints and concrete forms.

CET 441. HIGHWAY DESIGN AND CONSTRUCTION. (3). An introduction to highway planning, economic considerations and traffic engineering. Design and construction of modern highways including grade separations and interchanges.

CET 442. PAVEMENT DESIGN. (3) Prerequisite: CET 441. A study of stresses in flexible and rigid pavements, and properties of pavement components. Design of rigid and flexible pavements. A discussion of pavement performance and failures and of pavement strengthening.

CET 444. ASPHALT PAVEMENT MIXTURES. (3) A study of the chemical and physical properties of asphalts, classification and properties of mineral aggregates, significant properties of asphalt paving mixtures, design of hot-mix asphaltic concrete, asphalt pavement performance and reconstruction of old asphaltic pavements.

CET 451. PHOTOGRAMMETRY. (1) Prerequisite: course in elementary surveying and CSC 100. An outline of the fundamental principles of photogrammetry and photogrammetric procedures used in engineering practice. Students learn how to use modern photogrammetric equipment.

CET 452. ENVIRONMENTAL LABORATORY. (1) Prerequisite or corequisite: CET 462. A laboratory designed to familiarize the student with the analysis of water and sewage and with problems related to environmental control.

CET 453. CONSTRUCTION ENGINEERING TECHNOLOGY FIELD LABORATORY. (1) Prerequisite: senior standing. A synthesis of prior work, using fundamental principles as applied in a directed project. Three laboratory hours per week.

CET 462. INTRODUCTION TO ENVIRONMENTAL ENGINEERING. (3) Prerequisite: CET 332. The study of water supply, treatment and distribution and of liquid-waste disposal systems.

CET 464. INTRODUCTION TO URBAN ENGINEERING. (3) The study of city planning, including street layout and lighting and the design of water, sewerage, storm drain, and solid-waste collection and disposal systems. Street maintenance and traffic analysis; air pollution control.

CET 466. INTRODUCTION TO AIR POLLUTION CONTROL TECHNOLOGY. (3) Prerequisite: consent of instructor. The study of the sources of air pollution, air quality and emission standards, monitoring of air quality and the control of air pollution.

CET 467. INTRODUCTION PUBLIC HEALTH ENGINEERING TECHNOLOGY. (3) Prerequisite: consent of instructor. A study of the public health engineering in rural, urban and industrial centers with emphasis on water, housing, heating, cooling, ventilation, noise, milk, food, insects and rodents, monitoring and control.

CET 472. LAND SURVEYING. (3) Prerequisite: basic course in surveying. A study of the advanced principles and practice of land surveying. The study will prepare the student for the National Council of Engineering Examiners Land Surveyors examination and the State examination for Land Surveyors.

CET 473. CONTROL SURVEYING. (3) Prerequisite: basic course in surveying. A study of the theory, equipment and data reduction of electronic distance measurements; control specifications, methods and problems in obtaining large area angular measurements; precise leveling; triangulation with introduction to least square techniques.

CET 481. COST ESTIMATING I. (3) This course provides the student with the understanding of characteristics and methods in the application of construction materials. The study develops the methods and procedures for preparing quantity surveys.

CET 482. COST ESTIMATING II. (3) Prerequisite: CET 481. This course provides the student with estimating techniques applied to project work. Topics include sub-contractors, plant and overhead, profit, bidding, etc.

Electrical Engineering Technology

EET 311. ANALYSIS OF LINEAR NETWORKS. (3) Prerequisite: ET 371. Review of complex numbers and phasor notation. Steady state analysis of electrical networks using Kirchoff's laws; applications of various network theorems; magnetically coupled circuits; three-phase circuits.

EET 312. SEMICONDUCTORS. (3 Prerequisite or corequisite: EET 311 and EET 381. A study of the atomic structure and physical properties of semiconductor materials followed by a study of specific devices, such as unijunctions, field-effect transistors. Applications of these devices in specific circuits.

EET 351. ELECTROMECHANICAL TECHNOLOGY LABORATORY. (1) Prerequisite or corequisite: EET 381. Experiments illustrating basic motor/generator characteristics, the principles of operation and applications of feedback control systems, and the design of relay combinational switching circuits. Emphasis is placed on the writing and preparation of technical reports. Three laboratory hours per week.

EET 352. SEMICONDUCTORS AND CIRCUITS TECHNOLOGY LABORATORY. (1) Prerequisite: EET 351. Prerequisite or corequisite: EET 311, EET 312 and EET 381. Experiments illustrate (1) the characteristics of transistors and other semiconductor devices and methods of measuring various transistor parameters; (2) the characteristics of several types of electrical networks, especially lead/lag networks, and also the determination of gain/phase characteristics (Bode plots) of amplifiers; and (3) the design of combinational switching networks and their implementation with discrete components. Three laboratory hours per week.

EET 381. INTRODUCTION TO SWITCHING NETWORKS. (3) An introduction to Boolean algebra. Disjunctive and conjunctive canonical forms. Applications to the analysis and design of combinational switching circuits utilizing both relays and semiconductors. Minimization of switching functions. Design of multiple-output networks.

EET 382. LOGICAL DESIGN OF SEQUENTIAL CIRCUITS. (3) Prerequisite: EET 381. The description and classification of sequential switching circuits; the operation of the principal types of flip-flops. The analysis and design of pulse-mode and fundamental-mode sequential circuits including state-table reduction procedures.

EET 385. MINICOMPUTER PROGRAMMING. (3) Prerequisites: EET 381 and CSC 100. The major emphasis is placed on the principles of assembly-language programming of digital computers. Students learn to program a small-scale computer, to operate it and to run the programs which they write. The basic principles of operation of a digital computer are covered, especially as to how the computer responds internally to different elements in the program.

EET 411. TECHNOLOGY OF ACTIVE NETWORKS. (3) Prerequisites: EET 311 and EET 312. Prerequisite or corequisite: ET 471. A study of the black box approach to the analysis of amplifiers in general, junction transistors, small signal models, field effect transistors, feedback principles and applications, and pulse circuits.

EET 412. DIGITAL ELECTRONICS. (3) Prerequisites: EET 382 and EET 411. The analysis and design of pulse circuits using discrete components and the analysis of various forms of digital integrated circuits, including RTL, DTL, TTL, ECL and MOS logic. Other areas studied include the transmission of digital signals, power supply bussing, and decoupling, cross-talk and system noise.

EET 451. COMPUTER TECHNOLOGY LABORATORY. (1) Prerequisites: EET 452 and EET 481. Prerequisite or corequisite: EET 412. Students learn to communicate with a digital computer by means of a teletype terminal. They learn to operate an analog computer and to use it for solving certain types of differential equations. Experiments also illustrate the characteristics and applications of operational amplifiers, A/D converters, and D/A converters; interfacing the digital computer with analog devices; and displaying of information. Three laboratory hours per week.

EET 452. INTEGRATED CIRCUITS AND DIGITAL ELECTRONICS TECHNOLOGY LABORATORY. (1) Prerequisite: EET 351, EET 312 and EET 382. Experiments illustrating the characteristics of various types of digital integrated circuits and the design and implementation of sequential switching networks using integrated circuits. Three laboratory hours per week.

EET 461. INDUSTRIAL INSTRUMENTATION. (3) Prerequisites: EET 311 or consent of instructor. A review of the basic physical principles that apply to the design of sensors and transducers, followed by a study of pneumatic and electrical measuring instruments and transducers. Emphasis is on the different methods available for measuring such quantities as pressure, temperature and flow rate and on the selection of the best method for typical applications that exist in the process industries.

EET 481. COMPUTER DESIGN. (3) Prerequisites: EET 382. Prerequisite or corequisite: EET 385. The function and operation of the various elements that comprise a digital computer; methods for performing arithmetic operations; types and operation of memories; operation of I/O equipment; machine codes and communication with the computer.

EET 483. MODULATION AND TRANSMISSION. (3) Prerequisite: ET 471. Prerequisite or corequisite: EET 411. An introduction to Fourier series. Frequency analysis of signals; amplitude, phase and pulse modulation methods.

EET 484. DESIGN OF REAL-TIME SYSTEMS. (3) Prerequisites: ET 371 or MATH 120 and EET 385 or CSC 201. An introduction to the nature, characteristics and applications of real-time computer systems. Basic probability theory and a brief introduction to queuing theory. The principal factors and techniques involved in the design of large-scale, real-time data-processing systems.

EET 486. MICROCOMPUTER APPLICATIONS. (3) Prerequisite: EET 481. Two (2) lecture hours and three (3) laboratory hours each week. A thorough study of the organization, capabilities and techniques of utilization of the Intel MCS-4 microcomputer set. Laboratory design projects will give the student the opportunity to design the soft-ware and the hardware interface for one or more typical applications of the MCS-4 microcomputer set.

Mechanical Engineering Technology

MET 311. KINEMATICS. (3) Prerequisite or corequisite: ET 371. The study of the relative motions of mechanisms of machines. Displacement velocity and acceleration relationships of elements of a mechanism as applied to mechanical power transmitting equipment.

MET 312. DYNAMICS. (3) Prerequisite: differential and integral calculus. The dynamic behavior of machine elements, translation and rotation of a rigid body, the principles of conservation of energy and momentum.

MET 322. STRENGTH OF MATERIALS. (3) Prerequisite or corequisite: ET 371. A course designed to extend the student's knowledge of basic strength of materials with emphasis on applications to engineering problems. Included are the stress-strain relationships resulting from direct loads, torsional loads and bending loads, and also the results obtained from applying more than one of these loads simultaneously. Beam deflection and column loading.

MET 331. FLUID MECHANICS. (3) A study of the fundamental principles of fluid mechanics. Topics covered include manometry, buoyancy, forces on submerged bodies. Bernoulli's equation with applications, orifices, pipe losses and an introduction to hydrodynamics.

MET 341. THERMODYNAMICS. (3) Prerequisites: ET 371 and CHEM 101. The perfect gas law; the first and second laws of thermodynamics and their application to power and refrigeration cycles. Gasses and mixtures of gasses, especially air and water vapor. Introduction to heat transfer with applications.

MET 351. FLUID MECHANICS LABORATORY. (1) Prerequisite or corequisite: MET 331. Laboratory experiments relating to flow through conduits, the experimental determination of fluid properties, and the behavior of fluids in static and dynamic equilibrium.

MET 352. STRESS ANALYSIS LABORATORY. (1) Prerequisite or corequisite MET 322. Experiments illustrating stress-strain relationships in engineering materials and the use of brittle coating, photo-elasticity, and electrical-resistance strain gauges.

MET 411. MACHINE DESIGN I. (3) Prerequisites: MET 312 and MET 322. The first part of a two-semester course designed to apply previously acquired skills, along with newly attained ones, toward the design and analysis of machine components.

MET 412. MACHINE DESIGN II. (3) Prerequisite: MET 411. A continuation of MET 411 with emphasis on new methods of problem solving and opportunities to integrate previously attained skills and knowledge into the design and optimization of machine system.

MET 441. AIR CONDITIONING. (3) Prerequisite: MET 341. A study of the principles of heating and air conditioning, including calculation of heat loss and heat gain for buildings, heat and cooling systems, psychrometric principles, air distribution, refrigeration and related automatic control apparatus.

MET 442. DESIGN OF MECHANICAL SYSTEMS FOR BUILDING. (3) Prerequisite: MET 331 and MET 341. The study of heating and air conditioning design involving chilled water and hot water piping, including pump sizing; water and sanitary system design; and sprinkler system design. The course will also include a study of the National Fire Code and the National Plumbing Code.

MET 452. INSTRUMENTATION LABORATORY. (1) Prerequisite or corequisite: MET 462. A laboratory designed to give students practice in the use of the various instrumentation devices studied in MET 462.

MET 453. THERMODYNAMICS AND HEAT TRANSFER LABORATORY. (1) Prerequisite or corequisite: MET 341. Design projects and experimentation involving the fundamental principles of thermodynamics and heat transfer. Three laboratory hours per week.

MET 462. INSTRUMENTATION. (3) This course is intended for students having no background in electronics or electric circuits. Basic D.C. circuit theory, including Kirchoff's laws, is covered first, since the primary emphasis of the course is on electrical and electronic instruments. The nature and analysis of errors in measurements is also covered, followed by the theory of operation, selection criteria and application of the major types of electronic instrumentation.

MET 472. INDUSTRIAL CONTROLS. (3) Prerequisite: ET 471. An introduction to the theory of closed-loop control systems with emphasis on servomechanisms; a study of various types of process control systems used in industry including detailed treatment of numerical control systems.

MET 481. HEATING, VENTILATING, AIR CONDITIONING, PLUMBING, AND ELECTRICAL CONSTRUCTION SYSTEMS TECHNOLOGY. (3) Basic theory and practical application of heating, ventilating, air conditioning, plumbing, and electrical systems construction. Credit toward degree requirements only for students in the Construction Engineering Technology option.

Mechanical Engineering Technology —
Industrial Engineering Technology Emphasis

IET 311. METHODS ANALYSIS (3). Analysis of work methods; a study of work measurement systems.

IET 351. METHOD ANALYSIS LABORATORY (1). Prerequisite or corequisite: IET 311. Analysis and design of work methods; principles of motion study; work measurement by direct and predetermined motion-time systems.

IET 411. PRODUCTION CONTROL SYSTEMS (3). Principles, analysis, and design of production and inventory planning and control. Demand forecasting, production scheduling and control systems and introduction to CPM.

IET 412. QUALITY CONTROL (3). Prerequisite: MAT 122. The theory and application of inspection sampling plans and control charts for the design, specification, and control of product quality.

IET 421. PLANT LAYOUT (3). Prerequisite: IET 311. Designing a plant or office with respect to material handling, machine location, auxiliary services, capital requirements, safety, and personnel organization.

IET 431. ENGINEERING ECONOMICS (3). Principles of evaluating alternative engineering proposals. Economic measures of effectiveness, costs and cost estimation, basic comparative models, breakeven and replacement analysis.

IET 441. OCCUPATIONAL SAFETY (3). Causes and prevention of industrial accidents. Hazardous processes and materials. Design of accident prevention programs.

IET 451. PLANT LAYOUT AND MATERIALS HANDLING LABORATORY (1). Prerequisite or corequisite: IET 421. Analysis and design of material handling systems; specifications of system components.

IET 452. DIRECTED PROJECTS (1). Prerequisite: senior standing. A synthesis of prior work using fundamental principles applies in a directed project. Design of production systems and sub-systems.

IET 462. HUMAN FACTORS (3). Human capabilities and limitations affecting communications and response in man-machine systems. Physiological and psychological fundamentals.

College of Human Development and Learning

Dean: Professor Chase
Distinguished Professor: Powers
Professors: Britt, Burke, Hackney, Smith
Associate Professors: Antonelli, Howard, McLeod, Mork, Pleasants, Rowland, Roberts
Assistant Professors: Armstrong, Clark, Edwards, Goodman, Holland, Hoyle, Kochendoffer, Lueder, Mankinen, Morris, Parker, Riley, Romine, Sadoff, Whaley
Instructors: Bambach, Baptiste, Carter, Cole, Gwaltney, Hammond, Sapp
Lecturers: Adair, Adkins, Bird, Duffy, Harold, Jeffers, Leopard, Maulden, Parrish, Schaffer, Thompson

The Bachelor of Arts Degree with a major in Human Development and Learning is designed in response to the living/learning styles of individuals and groups, the changing needs for human services, and the changing ways of dealing with the quality of life and the environments. In the program of studies, the process of education is not seen just as preparation, but as the form of enablement available throughout the life cycle. As problems of people and human services have become increasingly important in society, a demand has developed for means of equipping people with new knowledge and providing opportunities for new experiences which can be synthesized into professional and personal life styles.

The program is designed for the preparation of early childhood and intermediate teachers, infant and child development specialists, program directors, infant and day care coordinators, human service specialists and other personnel for related helping professions. The curriculum seeks to integrate the three components of general studies, a helping specialty, and professional work in the helping processes.

Program design is directed toward the development of human potential. Emphasis is given to the development and analysis of experiences which free the capacity to learn; the teacher/learner relationship; factors of meaning, values, and self-concepts which cause behavior; and experiences which provide opportunities for person-to-person relationships. Experiences in various school-community settings provide opportunities for the development of competencies necessary for self-analysis, value judgments, choices, evaluation, and behavioral change.

The program offers unique opportunities for students of teaching and learning to participate in a continuum of experiences

involving classroom studies, experimentation, action research, functional project development, independent studies, and clinical experiences. Emphasis is given to the design of personal programs of study, to the organization of experiences for individuals with genuine personal interests or needs, and to programs for groups and school faculties with interests and problems.

The development of programs of study and activities of the College of Human Development and Learning as translated into person-to-person relationships, teacher/learner relationships, and services to the University and society, represents commitment to beliefs that professional undergraduate and graduate experiences designed for teachers and other personnel for the helping professions should give priority to:

1. The cognitive and affective understanding of human potentialities and the release of human potential toward continuous growth and development of personhood;

2. The experiences which insure that the teacher and other personnel in the helping professions are liberally educated and possess some intellectual depth and competencies in selected teaching fields and related disciplines;

3. The identification of one's beliefs, prejudices, elements of relationships, and behavior;

4. The analysis of teaching learning and other helping relationships which identify values, meanings, and the behaviors influencing self-concepts;

5. The development of moral judgment through the establishing of personhood as a fully-functioning self in relation to humanity;

6. The expansion of the field of awareness to the end that a more nearly complete complex of multidimensional relationships may be established between the learner and one's perceptions, one's behavior, the structures of knowledge, and the reification of theory into practice;

7. The integration of knowledge to promote the expanding of perception and the relating of ideas to elements of the present, the future, and the past; and

8. Experiences which provide involvement in the development of competencies necessary for self-analysis, value judgments and choices, evaluation and behavioral change through clinical learning and the use of multi-forces in the solution of problems.

With commitment to the above beliefs, and in the move from heory into practice, six fundamental factors become the focal points n designing and evaluating learning styles: (1) The Person; (2) The

Environment; (3) The Integration and Relationships; (4) The Consequences; (5) The Person's Perception; and (6) The Person's Behavior.

The student who satisfactorily completes the program will have acquired at least 10 competencies; this student will be:

1. A person who demonstrates a commitment to caring attitudes in relation to human growth, development, and learning;

2. A person who has advanced in the process of becoming a self-learner; that is, one who is capable of self-initiated learning which includes the integration of learning about one's self;

3. A person who has internalized the liberating concepts from the various disciplines of the humanities, the creative arts, the natural sciences and mathematics, and the social sciences;

4. A person who has developed a special competency or competencies in some field(s) or activity that one wishes to share with another;

5. A person who demonstrates an understanding and appreciation of integrated knowledge; who sees relationships, integrates, differentiates, and blends and fuses experience with a tone and spirit of unity;

6. A person who demonstrates attitudes and skills for entering into a living/learning relationship within a wide range of diversity;

7. A person who demonstrates the ability to design and utilize creative environments for learning;

8. A person who has appreciation and knowledge of contemporary thought, research, and methods of study in human development and learning;

9. A person who feels and understands the integral relationship between living/learning, one's role as a facilitator, and the interdependence between people, cultures, communities, and societal institutions; a person who perceives the interrelationships; and

10. A person who grasps and copes with reality as subjective discovery; one who sees the projection from past and present into the future as relevant in the continuing development and alteration of individual life-styles.

The completion of the development of the above competencies cannot accurately be measured by semester hours alone. Typically the student is expected to spend a minimum of eight semesters

completing the program. College credits earned and competencies developed before entering the program will be evaluated and may be applied toward program requirements; while the typical student may complete the program in eight semesters, others may require a longer time.

Within the framework of these desired competencies, program priorities are as follows:

Priority 1. A graduate and undergraduate degree program of studies which integrates various related disciplines and schools of thought into a framework which truly facilitates understanding and appreciation of human potential; one which gives emphasis to the development of self-directed learning in relation to needs, performance, and continuous self-evaluation.

Priority 2. Individualized, open-curriculum programs in relation to individual strengths, weaknesses, interests, and continued growth as guided by a committee of faculty and peers representing several disciplines or content areas.

Priority 3. Experiential learning integrated and directed toward the study of people, environments, growth and development, and appreciation of the richness of human experience.

Priority 4. A program developed around and including several options for the student, selection of which will be based upon individual readiness, interests, and needs.

Experiential Learning

Experiential learning is basic to the development of the above competencies. Experiential learning provides opportunity to use actual experiences for the student to pursue as a motivating force for deepened study. The student thereby becomes familiar with concepts personally experienced through role identification, reality testing, awareness of people and their various levels of relationships, behavior analysis and the consequences implied in decision making procedures. Experiential learning is "open" in that it calls for choices, selections, self-screening, and involvement with self-analysis and team participation.

The program of clinical experiences and internships (HDL 350, 470A, 470B, and 470C) is designed so that experiental learnings will begin just as early as the program of intellectual analysis, and should proceed alongside it, step by step. As students are reading and writing about human experiences in English, history, or the social sciences; or, as mathematical, psychological and biological concepts are examined in the university classroom, students are also experiencing first-hand observations, involvements, and consequences of working with children, adults, and institutional systems in a variety of environments. Experiences should move naturally

into the next step of intellectualization and the next PHASE experience. *The following criteria describe what has been termed experience and are guidelines for designing internships and clinical experiences.*

1. Experiences have an exploratory quality, flowing into the whole school-learning environment and interrelating with personal situations, life-styles, choices, and with various elements of the larger community.

2. Experiences seek an inward quality which facilitates the process of seeing oneself more clearly as a person, as a student, and as a teacher in a relationship.

3. The closely integrated, intellectual and emotional aspects of each phase of learning for each individual student must be appropriately assessed with that individual if experiences are to facilitate a self-screening and self-revealing quality. Human beings look at themselves with clear objectivity only if they can afford to do so. When stresses grow too great or when challenges and involvement grow too light—as they often do, both in teaching area courses and in professional experiences—people close down their perceptions, distort the fields of perception, and see what they need to see.

4. The proper role of early experiences is to help the student see reality, to realize that he or she is dealing with it, to identify problems, to discover possibilities, and to become more comfortable in relationships with people and institutions. Even more fundamentally, the experiences are designed to assist the learner in assessing strengths, weaknesses, and the student's needs—room and motivation to grope and to blunder. The student needs to make choices about behavior and solutions, to feel the consequences of choices, and to gain skill and confidence in planning new courses of action. Of primary importance, however, the student must begin to grow and to develop feelings about the kind of person, the student, and the teacher he or she wants to be. The student must slowly form personal commitments.

5. Experiences in clinical settings and seminars, or in classrooms and lecture halls, must be broad and varied so as to bring the student into contact with a great variety of potential models. All models should be open to inquiry from which more autonomous learning may be facilitated. Diagnostic experiences should encourage continuous evaluation, technical and personal input, and discovery with the freedom of application, reevaluation, and new applications. No student should be "stuck" with one model, one teacher, one cooperating school or agency once further growth is blocked. Students need desperately to learn that they, as unique persons, have their own peculiar mix of strengths, talents, needs, and weaknesses, and that their potential is truly unlimited and need not be like that of any other.

Teaching/Learning Teams for Sequential Development

At the time of admission and during the first seminar, Processes of Growing I (HDL 250), each student is assigned to a team, Task Force, created to operate as a teacher/learner relationship. Each Task Force consists of 10 to 12 faculty members and an appropriate number of students. Student members will be assigned so that each team is composed of undergraduates and graduates representing the various class distributions and areas of interest. Each Task Force is responsible for all college activities within a specific geographic area. Included among these responsibilities are:

1. Insuring coordination, integration, and group program planning;

2. Forming the structural group for Processes of Growing Seminars;

3. Facilitating the utilization and integration of students with various interests and competencies in cooperative approaches to solving problems;

4. Encouraging peer teaching/learning in the processes of planning, directing projects, and evaluating;

5. Providing an organizational structure of one or more teams for clinical experiences, internships, project design and development as related to other courses and seminars;

6. Providing an organizational structure for the collection and evaluation of evidences related to the extent to which competencies are identified and evaluated for each individual;

7. Creating environments, centers, "settings" for internships, in-school undergraduate and graduate studies organized around real problems and needs for educational change, problem solving in real environments, and special individual study and research;

8. Providing interdisciplinary talents to the solution of problems found in the environments and, therefore, demonstrating a process;

9. Stimulating cooperative planning between the college and leaders in environments; and

10. Assisting in program development, decision-making, and administrative duties of the college.

Admission

Students are admitted to the College of Human Development and Learning through general admission to the University. The College thus becomes the professional home for students who express in-

terest in Human Development and Learning as an area of study for prospective teachers, social service personnel, recreational specialists, guidance personnel, and for other specialists in the helping professions as the areas develop. Due to the sequential and developmental nature of the program, it is desirable that the student apply for admission as a major in Human Development and Learning as a freshman or as early in one's University career as possible.

Students admitted to other colleges of the University may complete a planned program of studies in the College of Human Development and Learning designed for interdisciplinary interests, for exploration and general interest, for intermediate or secondary certification, or as a double major program as determined by the student and the home college. It is the desire of the College of Human Development and Learning to design programs which will be highly relevant to students of business, of the arts, and of the sciences.

Specific requirements for admission are:

1. Eligibility for admission to the University:

2. Promise and readiness for experiential learning, involvement, and working with others as expressed by interest, psychological readiness, and skills of communication;

3. Readiness for, and interest in, the helping professions as expressed in experiential background and other involvements; and

4. Readiness for, and interest in, the development of a teaching/learning or helping specialization as evidenced in programs and/or experience which insure that the student will become more liberally educated and will develop some intellectual depth and competencies in selected teaching fields and related disciplines.

Residence

The undergraduate student admitted as a junior or a transfer student will plan to spend a *minimum* of two years in the program from the time the student is accepted as a major in Human Development and Learning.

Transfers

Undergraduate transfers will be considered in the same manner as other undergraduate degree candidates. Human Development and Learning advisers will be responsible for planning in consultation with the student and, if necessary, the former institution, a program which will take into account previously completed studies related to the degree sought.

North Carolina Teacher Certification

North Carolina currently provides for three types of certification based upon the completion of approved bachelor degree programs judged on the depth and breadth of one's academic preparation and the content and experiences of the professional component of preparation. These certificates are Early Childhood (Kindergarten through Third Grade), Intermediate (grades four through nine) and Secondary (grades seven through 12). Within the University of North Carolina at Charlotte, students electing Early Childhood certification will be Human Development and Learning majors; those who elect Secondary certification will major in academic disciplines within the appropriate college; and Intermediate certificate aspirants may elect to major in either Human Development and Learning or the teaching field depending upon the individual's interests and needs.

Graduates Seeking Certification

Special students admitted to the University for teacher certification purposes will be enrolled in Processes of Growing Seminars and other seminars in the same manner as regular undergraduate students. Specific seminars and courses necessary will be determined by a Human Development and Learning committee through comparison of the student's prior preparation with the guidelines of the University's approved program in teacher education. The committee will then plan a program with the student and file a copy of the approved plan with the State Department of Public Instruction. A minimum of one (1) year of full-time study will be required of such applicants.

Admission to Internships

Applications for admission to HDL 470A or 470B (Internship) must be filed with the College of Human Development and Learning by April 15 for the following fall semester and October 15 for the following spring semester. For admission to HDL 470A or 470B, candidates must be admitted to the Teacher Education program, have a grade point average of at least 2.5 in course work completed in the teaching content area, sound mental and physical health, good speech, the approval of the College and the recommendation of the major department.

Teacher Placement

The Placement Office in the Division of Student Affairs, in cooperation with the College of Human Development and Learning, provides placement services for qualified graduates. All students in the Human Development and Learning program are urged to complete their credentials since most school systems request candidates who are applying for positions to submit them. In addition, school administrators may contact the University for prospective candidates who are registered with the Placement Office.

Curriculum Materials Center

Located in the Dalton Tower, the Curriculum Materials Center contains current textbooks and related curriculum materials representing all subject areas and grade levels taught in the public schools. The center receives approximately 60 education and related periodicals. A vertical file containing non-catalogued education materials is an integral part of the center. The library is a government document depository; thus, federal government publications pertaining to education are available.

Psychological Testing Laboratory

The Psychology Department maintains a psychological testing laboratory in which students gain experience in the selection, administration and evaluation of psychological and achievement tests. A library of literature on test instruments for student use is kept current.

Learning Resources Center

As part of the College of Human Development and Learning, the Learning Resources Center provides all students laboratory experiences in teaching learning resources. The latest audiovisual equipment and teaching media will be available for individual student familiarization. Instruction in the use, preparation and evaluation of teaching media as a functional aspect of teaching will be included.

Achievement Options

The final responsibility of providing evidences of the extent to which the desired competencies are developed, as with the responsibility of all learning, is the personal responsibility of each student. By utilizing, with the support and guidance of faculty advisers and peers, a variety of University resources, each student is aided in selecting various options for the achievement of goals and as support evidences for the completion of the program.

Each student shall be expected to identify specific competencies and personal behavioral objectives within the framework of the desired program competencies listed on page 154. This process shall be a major purpose of the student's first semester, The Process of Growing: I, (HDL 250).

The student may select a combination of options for the completion of various program requirements. One program requirement may be completed by one option, while another option may be selected for another requirement depending upon student needs, interests, and the availability of appropriate resources. The following options are provided within the organizational structure of the program:

Option I. Successful completion of approved courses offered within appropriate departments of the University will be recognized as evidence of the attainment of specific competencies.

Option II. Successful completion of an examination to challenge the content of specific courses identified in Option I will satisfy the competencies specific to these courses.

Option III. Students who feel that certain prior experiences have led to the achievement of particular competencies may devise, in consultation with their adviser in the College of Human Development and Learning and a faculty member from the department appropriate to the competency, a way to demonstrate individual competencies. If the plan is approved and successfully carried through, the competency will be considered satisfied and so recorded in the student's record.

Option IV. Students, individually or in groups, may seek, in consultation with faculty from the College of Human Development and Learning and the appropriate departments, to satisfy particular competencies through means not provided for above such as independent study, project development, group seminars, and other student designed activities for learning. Such plans, when approved by appropriate faculty in both departments and successfully completed, will satisfy the particular requirements.

Student Review and Evaluation

The model of evaluation utilized in a program of this nature must encompass all of the factors deemed important in the functioning of the individual. The following areas are considered the essential ones, at a minimum level, for those engaged in the helping professions:

1. Academic achievement including the application of appropriate learning in a practical setting;

2. The professional helper's attitude in relation to self, others, learning and the role of service in society;

3. Personal and social development in relation to self and others; and

4. Professional performance demonstrated in a healthy learning environment.

The designed program is competency based. As such, its emphasis is on the individual's ability to demonstrate that one has acquired certain knowledge and skills and is able to apply them in a

"real" setting. The function of the University faculty in such a program is to assist the individual student in the student's process of identifying relevant skills, demonstrating those in which one is already proficient, and selecting or designing learning experiences to acquire those in which one is not proficient. Rather than functioning judgmentally, the faculty should provide constant feedback to each student to facilitate self-evaluation.

One of the major roles of the Processes of Growing Seminars is to acquaint the student with the competencies which are sought and then to assist the student in designing a plan for demonstrating one's mastery of the appropriate skills and knowledge. Possible sources of data include various methods of standardized testing, audio and video tapes, films, photographs, papers and research studies, and other media deemed appropriate to the development of a professional portfolio. As a result, final recommendation for certification will be made by appropriate University officials.

Each student's progress will be reviewed each semester as a part of the teaming process in the various Processes of Growing Seminars. The student is responsible for developing, with one's team members and adviser, plans for demonstrating one's progress and for meeting any deficiencies or needs identified. Each seminar will be evaluated and the grade designation will be *P*, indicating satisfactory progress, and *NC*, indicating No Credit or unsatisfactory progress.

Since the program is geared to the student's development of competencies in relation to specific needs and interests in the helping professions, students whose evaluation is unsatisfactory *NC* on semester seminars will be encouraged to reassess their goals and whether they should continue in the program. The effort will be toward helping the student identify one's needs and weaknesses and toward helping the student determine the field and the structure in which one can function more productively rather than in simply eliminating one from the program.

Student evaluation gives emphasis to the College's obligation to provide each student with feedback to assist instructors and students in focusing on areas of particular strengths and/or weaknesses. It also takes into account the desire of graduate schools and employers to have a statement concerning individual potential achievement, growth, and development.

Therefore, the evaluation of individual students has both a personal and a social aspect. For example, has the student reached some personal goals? Have knowledge, skills, and attitudes been extended? The social aspect is concerned with the role the student fulfills in society. These two are inseparable within the individual student.

The evaluation approach of the College of Human Development and Learning is designed to offer maximum opportunity to develop and learn by feeding-back to each individual information concerned

with the quality and quantity of one's work. The performance of a quality-control of the professionals being educated and graduated is an obvious responsibility which will be met by the program. It is an inseparable part of the larger concern for the welfare, development, and learning of persons educated in the College of Human Development and Learning Program and the persons to be touched by graduates of that program.

Evaluation Check Points

There exists within the program several key points in the evaluation process. Among these are:

Admissions and Entry. The point at which base line data for each student with respect to each of the three components must be collected. This data serves as a beginning for program planning and evaluation in HDL 250;

Phase I, II, III, and IV. The student must demonstrate the satisfactory completion of each of the four Phase Sequences. Through the use of examinations, projects, papers, or other means designed by the student and the adviser, an evaluation of each phase will be recorded. Phase I and II must be satisfactorily completed before registering for Processes of Growing VI (HDL 470A).

Internship. During the semester prior to Processes of Growing VI Seminar, the internship must be planned and approved. An assessment and judgment will be made with respect to the student's growth and readiness to undertake the extensive, largely self-directed field experience with a prognosis of success; and

Exit. During the final semester evaluation of present development with respect to base line data, success in the total program and the meeting of the standards for the awarding of the degree.

Grading Symbols

1. *Pass (P)* symbolizes that the student has satisfactorily met the requirements of all three components in the learning process.

2. *No Credit (NC)* symbolizes that the student has not met satisfactorily all the component requirements.

3. *Incomplete (I)* symbolizes that a student has not completed work in components of the learning process, but otherwise is progressing satisfactorily. The appropriate form stating the specific deficiency and what is required to remove it must be completed by the instructor and filed in the student's portfolio in order to assign the grade of *I*. The deficiencies must be removed in accordance with the time limits prescribed by the University or the grade will be changed to *NC*.

4. *Withdraw (W)* indicates the student withdrew from the course under existing University policy.

To receive a *Pass (P)* in a seminar for which a *No Credit (NC)* has been received, the student must re-register for and satisfactorily complete the seminar.

Completion of Degree

Since the student's total program consists of course work in other colleges of the University as well as work in Human Development and Learning, the following minimum standards for the awarding of the degree are established:

1. A grade of *P* in all required Human Development and Learning seminars;

2. Satisfactory completion and evaluation of each Phase Sequence;

3. A grade of *P* in Internships;

4. A grade point average of 2.5 or above in all courses in the areas of Related Concentration;

5. An overall grade point average of 2.0 or above on all University course work for which grade points are awarded; and.

6. Recommendation of principal professor, one other professor in Human Development and Learning, and by one other person supervising the internship, after appraisal of portfolio, performance and other evidence of competencies developed.

PROGRAM SEQUENCE

As students are admitted, courses and experiences planned, and programs for individuals are developed, emphasis is given to individual strengths and weaknesses, and the goal is to design specific programs for individuals. Contact with several teachers and with various teaching styles is stressed. Full recognition is given to the value and worth of many kinds of school and learning experiences in addition to the classroom. Every effort is made to bring practicing teachers, members of the helping professions, professional students, members of the community, and the University into true partnership.

The professional sequence for undergraduate and graduate studies in the College of Human Development and Learning is presented as PHASES which may be conceptualized as an evolving continuous spiral, as a series of experiences, integrating Exploration, Involvement, Commitment, and Universality. Therefore, all courses, seminars, and clinical experiences are organized around these four PHASES. Each student must satisfactorily complete a sequence of studies in each PHASE. Evaluation examinations are administered upon the completion of studies in each PHASE

PHASE I: *EXPLORATIONS IN HUMAN POTENTIAL*

The first phase of the integrated program of professional study focuses upon the nature, potential, and worth of the person. Emphasis is given to life patterns, creative potential, social forces and human potential, and to the image of the person as becoming. During this PHASE, studies focus upon the person in urban society, the facilitation of meaning, and upon those factors and conditions which facilitate or hinder the growth of human potential. General studies of inquiry into the human sciences, the social sciences, health and movement, and language and communication provide foundational studies for exploration into human potential and for further study. Students will be concerned with an in-depth analysis of their beliefs, values, and their personal relationships in relation to a growth environment. Opportunities are provided for the student to be engaged in clinical experiences that will promote understanding of the sociological, psychological, and philosophical foundations on which educational experiences are selected and organized.

Requirements for the completion of PHASE I are as follows:

I. *General Studies*

Operating from the assumption that the holder of a degree in Human Development and Learning is first a person knowledgeable in several areas of human endeavor, the general studies are conceived as the minimum competencies necessary for further understanding of the developmental aspects of human potential. As a minimum, general studies serve to acquaint the student with concepts and understandings in the major areas of knowledge. This will be the individual's last formal encounter with some areas while with other areas these experiences will be the base for concentration of study and for lifelong growth. Minimum achievements to be accomplished are:

a. The ability to communicate effectively orally and in writing;

b. An understanding of the skills involved in a non-verbal language communication;

c. A sensitive understanding of creative expressions in the arts, music, philosophy and literature;

d. Knowledge of and appreciation for cultural development as expressed in social structures;

e. Knowledge of and appreciation for scientific development with particular emphasis on human growth and the relatedness of the field of science;

f. An understanding of systematized ways of thinking and problem solving as exemplified in the areas of mathematics and logic;

g. Understanding of fundamental aspects of mental and physical growth and development; and

h. Increased self-awareness and self-acceptance.

Evidences of the above competencies may or may not be measured by semester hours or the completion of courses. The satisfactory completion of selected courses when pursued with purposes and goals related to individual needs generated from the above competencies may yield satisfactory evidence. A planned program, therefore, should include studies in various disciplines which reflect balance, breadth, and basic skills and knowledge as general or liberal studies. When translated into a conventional program of existing courses and semester hours as a guide to studies, the following program meets existing University general degree requirements and serves as an example for minimum development:

English and Language Development	6 semester hours
Biology and Human Genetics	7 semester hours
Social Sciences	12 semester hours
Creative Arts and Humanities	6 semester hours
Health and Physical Education	6 semester hours
Logic and Mathematics	6 semester hours

II. *Helping Processes*

HDL 250, 400A, 350A, 400B or equivalents as approved by faculty committee.

III. *PHASE I Evaluation Examination*

PHASE I examination may be taken after the satisfactory completion of HDL 250; 400A, B; HDL 350A, HED 409, HED 300; and, at least 18 hours of the general studies requirements; or equivalents as approved by faculty committee. Typically, this examination is taken after the completion of the first two semesters.

PHASE II: *MEANING AND GROWTH IN TEACHER/LEARNER RELATIONSHIPS*

PHASE II in the integrated program of professional study seeks to extend and deepen the interest and understandings explored in PHASE I by a continuing inquiry of general studies in the arts and sciences, and through the beginning study for the development of specialties. During this PHASE, the student considers particularly the special problems attendant to the release of human potential through participation in a particular interpersonal relationship-that of teacher and learner. Emphasis is given to living/learning styles and environments in relation to growth and developmental patterns.

As part of the work in this PHASE, educational experiences are selected and organized on the bases of the social, psychological, and philosophical tenets examined in Phase I. The outcomes of these decisions having been used as a point of departure, the problems of design and implementation of living/learning styles at all levels are considered. In the undergraduate program, emphasis is upon processes of growth as it concerns the individual teacher/learner, while at the graduate level, the emphasis is extended to include a broader scope of teacher/learner relationships and multi-dimensional approaches to concepts of teaching, perception, learning, growth and behavior.

Requirements for the completion of PHASE II are as follows:

I. *Helping Processes*

HDL 400C, D; HDL 350 B, C,D; and HDL 420 A, B; or equivalents as approved by faculty committee.

II. *PHASE II Evaluation Examination*

PHASE II examination may be taken after the satisfactory completion of all general studies requirements and HDL 400 C, D ; 420 A, B; and 350 B, C, D; or, equivalents as approved by faculty committee. *This examination must be completed before* beginning HDL 470A-Internship.

PHASE III: *THE HELPING RELATIONSHIP*

PHASE III seeks to focus upon the helping relationship, a relationship in which at least one of the persons has the intent of promoting the growth, development, and maturity of the other, whether this be in a group or in a one-to-one setting. Teaching, guidance and counseling, administration, and the supervision of instruction are considered helping relationships, for each is organized to facilitate the growth of another. Work in this PHASE concentrates on the relationship of theory to practice and the development of appropriate skills.

Special emhahsis is given to the further development of areas of concentration as helping specialties and to the examination of basic beliefs, the techniques and analysis of helping relationships, and to the identification of values, meanings, and self-concepts which cause behavior. This PHASE assists the participant in an in-depth study of the processes of growing and theories of human development in relation to the various levels and cycles of growth.

Requirements for the completion of PHASE III are:

I. *Helping Specialty*

Fundamental to serving as a facilitator of human growth is the attainment of depth and breadth in some areas of systematized knowledge in which the helper seeks to operate. The major purpose of this area of study is to develop a special

competency or competencies in some field(s) or activity that the student wishes to share with another.

Minimum achievements to be accomplished are:

a. To demonstrate an understanding of the major skills and content concerns of the selected area of dicipline;

b. To demonstrate an understanding of the methods of inquiry of the selected area of discipline;

c. To interrelate knowledge of the selected area of discipline into other areas of human experience and illustrate the effect and role of the discipline in an interdisciplinary world; and

d. To demonstrate the value of knowledge through application, noting the variety and utility of disciplinary application.

The student shall select one helping specialty of area of concentration from the following:

1. *Creative Arts.* A program of studies designed to allow the student to explore facets of the arts in relation to interests and talents. The student is encouraged to explore several aspects of creativity, the arts, and their relationship to human development; skill development, materials, and production in relation to analysis of form, expression, and structure. Seminar, workshop, and project offerings shall be selected in consultation with a principal professor of Creative Arts. A concentration in Creative Arts shall require a minimum of at least one to two full semesters of study or the equivalent.

2. *Cultural Studies.* A program of studies designed to allow the student to pursue in-depth the history, literature, music, and geography in relation to political and cultural heritage and structures. The student, in consultation with faculty advisers, shall identify thematic ideas such as "diverse political systems," "societal adjustments," or others of interest around which a program of studies may be designed equivalent to 18-24 semester hours. Regional studies may also serve as an area around which the program may be developed.

3. *Human Sciences.* A program of studies equivalent to a minimum of 18-24 semester hours designed to develop skill in and appreciation of scientific inquiry, the understanding of basic life processes, and the chemical and physical constitution of living matter.

4. *Language Development and Communications.* An integrated program of studies designed to develop an understanding of concepts of speech, dialects, patterns of language development and forms of communication (verbal and non-verbal) in

relation to the processes of socialization, historical and literary style, and structure. The area of concentration is designed to allow the student to develop talents and interests in language and communication skills in relation to interpersonal dialogue, the release of human potential, and the diversity of cultural heritage, attitudes, and values.

5. *Movement Education.* An area of study designed to allow the student to develop an understanding and appreciation of movement as a medium for improving and maintaining functional health and as an approach for releasing human potential. The student is provided the opportunity to develop an individualized approach to helping others learn to become aware of their physical abilities and to use them effectively in their daily activities of play, work, learning skills, and creative expression.

6. *Psychological Studies.* A program of studies designed to allow the student to pursue in depth various areas of exceptionality, emotional disturbances, psychological development, and testing.

7. *A Specific Discipline* or *Other Thematic Idea.* The student may select an area of study of major interest from one discipline or department such as English, History, Mathematics, or other approved programs.

As with General Studies, the development of a Helping Specialty is not a mere completion of an isolated list of courses or a number of semester hours. The program of studies should be planned in relation to stated competencies, identified needs, and goals of the student to insure the development of a concentration with some relatedness and depth as a specialty. As a guide to program planning, this component of the program should constitute at least 18-24 semester hours or the equivalent when measured in conventional terms.

II. *The Helping Processes*

HDL 470A or equivalent as approved by faculty committee.

III. *PHASE III Evaluation Examination*

PHASE III examination may be taken near or after the completion of HDL 470A, and after the completion of 12-15 hours of the Helping Specialty. The Examination is cumulative in nature, growing from Phases I, II, and III. It is not the internship alone.

PHASE IV: *Experience and Commitment in Human Development and Learning*

PHASE IV in the integrated program of professional study seeks to extend and deepen through experience and commitment, the interests and understandings developed during PHASES I, II, and III.

During this PHASE, the student considers particularly the special problems attendant to the release of human potential through participation and experience in a clinical setting involving the interpersonal relationship of teacher/learner as experienced in teaching, counseling, administration, supervision, and other helping relationships.

In this PHASE, participants implement the social, psychological, and philosophical bases concerning teaching/learning relationships in a clinical internship setting appropriate to their choices and professional commitments. Experiences will provide the participant an opportunity for the exercise of concern and commitment in realistically releasing human potential while actively working with human beings.

Requirements for the completion of PHASE IV are:

I. *Electives for Needs and Interest*

Opportunities and time within the program permit and encourage the student to explore courses and other experiences which are designed to develop specific needs and interests. These areas of study may be used to develop new competencies in fields other than the Helping Specialty or area of concentration, or this area may be used to strengthen or broaden the student's chosen specialty.

II. *The Helping Processes*

HDL 470B, 470C, 400E, 420C, D, E, F, or G; or, equivalents as approved by faculty committee.

III. *PHASE IV Evaluation Examination*

PHASE IV examination may be taken after the completion of HDL 470B and during the last semester of registration before graduation. The Examination is cumulative in nature, growing from Phase I, II, III, and IV. It is developed as a part of HDL 470C.

A Sample Program by Semester When Viewed as Courses

First Semester		*Second Semester*	
Processes of Growing I	(3)	Processes of Growing II	
Biology	(4)	Communication Processes & Skills	(2)
Health or P.E.	(3)	English	(3)
English	(3)	Genetics	(3)
Sociology or Anthropology	(3)	Social Sciences	(3)
		Health or P.E.	(3)
		Cultural & Scientific Impact	(2)
	16		16

Third Semester

Process of Growing III	(0)
Seminar on the Person A	(2)
Humanities/Creative Arts	(6)
Logic or Mathematics	(3)
Helping Specialty	(6)
	17

Fourth Semester

Processes of Growing IV	(0)
Living/Learning Styles	(2)
Seminar on the Person B	(2)
Logic or Mathematics	(3)
Helping Specialty and/or Elective	(6)
Elective	(3)
	16

Fifth Semester

Processes of Growing V	(0)
Living/Learning Environments	(2)
Helping Specialty and/or Electives	(12-15)
	14-17

Sixth Semester

Processes of Growing VI	(9)
Electives and/or Helping Specialty	(0-6)
	9-15

Seventh Semester

Processes of Growing VII	(9)
Helping Specialty and/or Electives	(0-6)
	9-15

Eighth Semester

Processes of Growing VIII	(2)
Developmental Exceptionality	(2)
Seminar on the Person C, D, E, F, or G	(2)
Helping Specialty and/or Electives	(9)
	15

Program for Secondary Certification

Candidates who plan to teach in the secondary school will fulfill the following requirements:

1. All required courses for graduation as specified by the department of the major.
2. A major in the academic field in which they plan to teach.
3. Related work approved by the major department.
4. Professional requirements for certification as indicated below.

In order to provide an extended in-school experience concurrent with the individual's academic and professional study, *the student must make known an interest in working toward certification in sufficient time to spend at least two years in the program.* Secondary

certification will be recommended, with the concurrence of the department of the major upon satisfactory completion of any existing University requirements for graduation, the requirements of the major department and college, and the following Human Development and Learning seminars:

HDL 250 Processes of Growing I: Exploration of Human Potential (3)

HDL 400 Seminars on the Person: Problem/Process (A) Communication Skill and Processes (2); (B) Cultural and Scientific Impact (2); (C) Living/Learning Styles (2); (D) Living/Learning Environments (2); and (E) Developmental Exceptionality

HDL 420 Seminars on the Person: Cycles of Growth (A) Early and Middle Years (2); and, (D) The Middle Years (2); or, (E) The Adolescent (2).

The above eight seminars are to be taken concurrently with Clinical Experiences (HDL 350A, B, C, or D) or with:

HDL 470A or B Internship (9)

HDL 470C Synthesis (2)

To be admitted to the professional internship the intermediate and secondary applicant must:

1. Be recommended by the department of the major;

2. Present a grade point average of 2.5 or above in area of the major;

3. Have completed prerequisite seminars in Human Development and Learning with grades of *P;* and

3. Present an overall grade point average of 2.0 or above in all University course work for which grade points are awarded.

COURSE DESCRIPTIONS

HUMAN DEVELOPMENT AND LEARNING

HDL 250. PROCESSES OF GROWING I: EXPLORATION OF HUMAN POTENTIAL (3) An introduction to the study of Human Development designed to allow the individual to look closely at one's self and one's relationship to others. Includes clinical experiences which are interrelated with other aspects of the total program to provide opportunities to work with others in a helping relationship as a source of data from which to explore aspects of human potential. Emphasis will be placed on self-evaluation and upon the development of a program of studies tailored to aid the individual in reach-

ing one's personal and professional goals. Areas of investigation shall give emphasis to the nature of human potential; the processes of meaning, valuing and choosing in relation to human interaction, and to an analysis of barriers and/or facilitators to the release of human potential.

HDL 350. PROCESSES OF GROWING: TEACHING/LEARNING TEAM.
A. Processes of Growing II (O)
B. Processes of Growing III (O)
C. Processes of Growing IV (O)
D. Processes of Growing V (O)
Seminars designed to continue the relating and integrating functions begun in Processes of Growing I. As a function to these seminars, clinical experiences will be planned and carried out to contribute to classwork in other seminars in which the student is enrolled. Semester by semester these seminars will serve as a "home base" for the students. They will also provide a planned clinical component to complement and integrate the content of Seminars on the Person and of the various areas of the Helping Specialties in relation to competencies being identified and developed.

HDL 400. SEMINARS ON THE PERSON: PROBLEM-PROCESS

A. Communication Skill and Processes. (2) This seminar focuses on developing greater awareness within each participant of how one conveys ideas to others and how one interprets the variety of verbal and nonverbal expression from others. In the belief that many ideas are transmitted non-verbally, the seminar members will interpret facial expression and body movement as one major function of human languaging. The verbal components of communication include dialectic and cultural influences on language as well as developing listening skills for qualities in speech such as tonality, resonance, sentence patterns, word selection and silence. Emphasis is given to developmental language and reading. Techniques for the development of language and reading are introduced. The major purpose of the seminar is to help each participant to understand both the sending and receiving of human communication with greater meaning through intrepreting the components of languaging within the context of the total communication effect.

B. Cultural and Scientific Impact. (2) Designed to help the student become aware of the interrelationship between the areas of the arts, sciences, humanities, and the social studies particularly as they relate to an understanding of human potential. Serves to encourage an integration of principles from the various disciplines with a focus on how they relate to living/learning. Emphasis is given to areas of investigation as structures of knowledge, interdisciplinary principles and concepts, ways of generating knowledge, technology and change, and concepts of futurism.

C. Living/Learning Styles. (2) Designed to provide the student with an opportunity to investigate the relationship between cognitive, affective and psychomotor development as they relate to

living/learning styles. Emphasis is on the process of learning in each of the three areas in relation to intellectual growth, the valuing process, the individual and exceptionality, and to multi-directional interaction and learning.

D. Living/Learning Environments. (2) Designed to provide the student with an opportunity to be involved in decision-making and decision-executing experiences which focus on the interrelationship of Living/Learning Styles and the environment in which individuals find themselves. Emphasis is given to areas of investigation such as the scope of the environment, designs and models, alternative systems, learning centers, and resources.

E. Developmental Exceptionality. (2) Designed to survey the field of human exceptionality. Emphasis is on both the exceptionally talented and the individual with developmental disabilities.

HDL 420. SEMINARS ON THE PERSON: CYCLES OF GROWTH

A. Early and Middle Years (2)
B. Adolescents and Aging (2)
C. The Infant and Early Years (2)
D. The Middle Years (2)
E. The Adolescent (2)
F. The Young Adult (2)
G. The Adult Years (2)
Seminars to provide the student with an awareness of total growth and development as the cycles of human growth are studied from the earliest days of infancy to the culmination of life in old age and death. Emphasis is given to biological and cultural inheritance, growth patterns, socialization, growth crises, life styles, identity and roles, and to methods of in-depth study in relation to learning and growth environments.

HDL 463. GUIDANCE: BEHAVIOR AND GROWTH. (3) An introduction to the study of guidance in the context of the helping relationship. Emphasis is given to the development of understandings, approaches and techniques for helping others make decisions directed toward the solution of problems and the facilitation for self-understanding and growth. Open to students not seeking teacher certification.

HDL 470. PROCESSES OF GROWING: INTERNSHIP, INTEGRATION, AND SYNTHESIS
A. Processes of Growing VI—Internship (9)
B. Processes of Growing VII—Internship (9)
C. Processes of Growing VIII—Integration and Synthesis (2)
These seminars are designed to provide the student with an opportunity to pursue an individually planned program of experiential learning activities in the areas of one's particular interest and academic concentration, to promote the growth and development of others under the supervision and coordination of University faculty members. Processes of Growing VI, VII, and VIII are designed as culminating and synthesizing functions. The seminars, offered dur-

ing the student's last three semesters, are intended to integrate the student into greater roles of responsibility involving action, research, and demonstration of developed competencies. The seminars require prior planning by the student or teams of students for the development of a program of study, research, and demonstration projects of experiential learning in relation to the helping processes and the chosen areas of the helping specialty. A final seminar, to include a seminar report and a portfolio of the total experience, is required. The process brings the student into greater roles of responsibility, not only with people outside the University community but also within the Process of Growing team itself. The student and his or her advisers plan during the fifth semester of study for Processes of Growing Seminars VI, VII, and VIII. Within the typical program the student should register for Processes of Growing VI and VII during the sixth and seventh semester of study. Processes of Growing VIII is undertaken during the final or eighth semester during which time the student engages in the processes and functions of synthesis, theory refinement, and evaluation in relation to both the *Helping Processes* and the *Helping Specialties*.

Courses for Advanced Undergraduates

HDL 570. SELECTED TOPICS IN HUMAN DEVELOPMENT AND LEARNING. (3-6) Prerequisite: HDL 250 and permission of the College of Human Development and Learning. Topics and special problems chosen in relation to human learning, ideas, practices, significant movements or detailed study of models for human learning. Seminars, independent study and clinical experiences. May be repeated for credit, with approval.

Library Science

LS. 520. ORGANIZATION AND ADMINISTRATION OF THE SCHOOL MEDIA CENTER. (3) Acquisition, processing, circulation of materials; student assistant; records and reports; attendance and scheduling; library quarters and equipment; professional relationships evaluation of library services.

L.S. 522. BASIC REFERENCE SOURCES AND MATERIALS. (3) The selection, evaluation and use of basic reference materials.

L.S. 524. READING GUIDANCE AND THE SELECTION OF BOOKS AND MATERIALS FOR CHILDREN. (3) A survey of the development of children's literature, with study of aids and criteria for selection of books and other materials; principles and objectives of reading guidance for the kindergarten and elementary school pupil.

LS 526. READING GUIDANCE AND THE SELECTION OF BOOKS AND RELATED MATERIAL FOR YOUNG PEOPLE. (3) A survey of library materials and principles and objectives of reading guidance appropriate for the junior high and high school student, with study of aids and criteria for their selection.

L.S. 528. NON—BOOK MATERIALS. (3) A study of the principles and techniques for the selection, acquisition, organization, circulation and use of non-book materials in the library program.

DEPARTMENT OF HEALTH AND PHYSICAL EDUCATION

Chairman: Professor Murphy
Associate Professors: Bostian, Tillotson
Assistant Professors: Avant, Dawson, Healey
Lecturers: Bass, Friesen, Gardner, Kerr, Pratt, Rose,Wilkins

COURSE DESCRIPTIONS

HEALTH EDUCATION

HED 300. FUNCTIONAL HEALTH DYNAMICS. (3) The dynamics of the science and teaching of functional health. Three lecture-laboratory hours each week.

PHYSICAL EDUCATION

PED 101. FOUNDATIONS OF PHYSICAL CONDITIONING. (1) The application of various physical training programs designed to improve and maintain physical fitness. One-sixth of the meetings will be devoted to lectures on physiological and psychological aspects of physical training. Three one-hour meetings a week.

PED 102. WEIGHT TRAINING. (1) The basic mechanics of weight training. Emphasis on anatomy, tests and measurements, individual strength development and isometric training. Three laboratory hours each week.

PED 103. FENCING. (1) The skills and rules of the sport of fencing. Three hours each week.

PED 106. ADAPTIVE AND DEVELOPMENTAL PHYSICAL EDUCATION. (1) Prerequisite: permission of the instructor. Prescribed ameliorative exercises adapted to individual needs, capacities and interests. Primarily designed for the individual with anatomical and functional defects.

PED 110. BEGINNING SWIMMING. (1) Designed to teach weak or nonswimmers a basic stroke and safe entry into and exit from the water. Three laboratory hours each week.

PED 111. INTERMEDIATE SWIMMING. (1) Prerequisite: PED 110 or permission of instructor. Emphasis on gaining competency in at least four basic strokes and two dives. Three laboratory hours each week.

PED 115. WATER SPORTS. (1) Rules and skills of water polo and water basketball. Three laboratory hours each week.

PED 120. BEGINNING TENNIS. (1) The rules, history, basic skills and basic strategy. Three laboratory hours each week.

PED 123. BEGINNING BADMINTON. (1) The rules, history, basic skills and basic strategy. Three laboratory hours each week.

PED 125. BEGINNING HANDBALL. (1) The rules, history, basic skills and basic strategy. Three laboratory hours each week.

PED 140. BEGINNING GOLF. (1) The grip, stance, stroke, use and selection of clubs, history, rules and etiquette. Three laboratory hours each week.

PED 142. ARCHERY. (1) The fundamental skills and selection, care and repair of equipment. Three laboratory hours each week.

PED 150. VOLLEYBALL. (1) The rules, history, etiquette, correct method of serving, passing, setting-up, spiking and blocking the ball, offensive and defensive team play and officiating are emphasized. Three laboratory hours each week.

PED 160. GYMNASTICS. (1) Single and combinations of stunts on the side horse, horizontal bar, parallel bars, uneven parallel bars, still rings, balance beam, trampoline and tumbling mats are taught. Emphasis is placed on fundamentals so the student can exercise creativity in constructing routines. Three laboratory hours each week.

PED 212. ADVANCED LIFE SAVING. (2) Prerequisite: PED 111 or instructor's permission. The science and skills associated with lifesaving. The course qualifies the student for the American Red Cross Senior Lifesaving Certificate. One hour lecture and two hours laboratory each week.

PED 213. WATER SAFETY INSTRUCTION. (3) Successful completion of PED 212 or current American Red Cross Advanced Life Saving Certification. The study of the techniques used in teaching people aquatic skills. Emphasis is placed on beginning swimming, swimming stroke technique and lifesaving techniques. Qualifies the student for the American Red Cross Water Safety Instructor's rating. Two hours lecture, two hours laboratory each week.

PED 219. SCUBA DIVING. (3) Prerequisite: current American Red Cross Advanced Lifesaving Card or equivalent. Advanced swimming skills including: breast stroke, American crawl stroke, side stroke, swim under water 25 yards, swim continuously for 20 min., tread water 10 min., tread water with hands out of water 5 min., and swim 50 yards with 10 lb. weight belt, or instructor's permission. The science and skills associated with the use of self-

contained underwater breathing apparatus. The course qualifies the student for the National Association of Underwater Instructor's (NAUI) basic SCUBA Diving Certification. Equipment furnished except wet suits. Two hours lecture, two hours laboratory each week and two open water diving field trips.

PED 409. PHYSICAL EDUCATION LABORATORY. Physical education instruction, principles of physical education teaching for the elementary grades.

PED 506. MOVEMENT THERAPIES FOR DEVELOPMENTAL EXCEPTIONALITIES. (3) A study of theorics, principles, programs and research in movement therapy. Designed to aid the student in evaluation of the learner for the selection and implementation of appropriate movement therapy.

COURSE DESCRIPTIONS

MOVEMENT EDUCATION

MED 350. MOVEMENT EDUCATION. INTRODUCTION AND OVERVIEW. (6) An introductory course in the awareness, understanding, appreciation and study of human movement. Emphasis is given to the analysis of student's own movement behavior. Overview of movement as a means of self expression, as exercise, play, games/sports will be studied. Clinical experiences are provided to introduce students to possible helping relationship roles. Six class hours per week, in addition to clinical experiences.

MED 400. MOVEMENT EDUCATION DIRECTED ACTIVITIES. (6) Prerequisites: MED 350 or consent of instructor. An in-depth examination (theoretical and practical) of the three major activity areas necessary for understanding and appreciating human movement: a) education games, dance and gymnastics; b) perceptual motor developmental skills/activities; c) specific recreational indoor-out-door activities. Six class hours per week, in addition to clinical experiences.

MED 401. MOVEMENT EDUCATION PROBLEMS. (1-6) Prerequisites: MED 350 and MED 400 or consent of instructor. An in-depth examination of movement problems: topics and special areas of interest chosen in relation to: a) teaching/learning about self and helping relationships using movement as the central focus; b) broad study of motor development and learning; c) scientific foundations of exercise, health and fitness; d) movement as therapy (improvement of self-concept and self-awareness; improvement of academic readiness; assisting with social skills). Seminars, independent study and clinical experiences will be the modes of teaching. May be repeated once for credit, with approval.

College of Humanities

Dean: Professor Mathis

The College of Humanities includes the areas of American Studies and Afro-American and African Studies and the Departments of Creative Arts, English, Foreign Languages, History, Philosophy and Religious Studies.

AMERICAN STUDIES

Coordinator: Professor Mason

The American Studies emphasis is intended to allow a student to focus strongly on various aspects of the culture of the United States while also gaining further variety of background from other facets of the University's curriculum. It is hoped that through this concentration he will gain insight into the interrelatedness of various aspects of American life, both past and present. (Students intending to teach in junior or senior high school should also find such an interdisciplinary emphasis to be very advantageous.)

A student desiring an emphasis in American Studies will major in English or History (following the basic pattern of one of those majors) and will take 27 hours in courses allowed toward the American Studies emphasis. In most instances there will be some overlapping of the requirements for the degree proper and for the American Studies emphasis.* All American Studies students will take American Studies 301, Introduction to American Studies, no later than the junior year, sooner if possible. Also, each is to take at least three hours of American Studies 303.

Following are examples of possible distribution of courses in a minimum American Studies emphasis. If one presumes only courses with academic credit of three hours each, the student would have to take nine courses for the emphasis. Those nine courses (27 hours) would be divided in one of these three ways:

*In the department of the student's major, 12 of the 27 hours for the American Studies emphasis also will be accepted as part of the courses in the subject of the major which are required for the department's degree if the student wishes to so apply all or part of 12 of the 27 hours of the emphasis; and the department may accept more than 12 hours for its requirements for the major if it finds it appropriate to do so. The other courses of the 27 hours will be applied, as appropriate, to other University requirements for the degree. In the American Studies emphasis, a maximum of 15 hours and a minimum of nine hours of courses in the department of the major are to be applied toward the 27 hours required for the emphasis. For example, an English major also acquiring an American Studies emphasis is assured that at least four of the nine courses for the emphasis can be counted toward the hours in English required for the major. The other five courses will be applied to other parts of the degree requirements. On the other hand, at least three and no more than five of his nine American Studies courses are to be in English. (This example presumes courses with academic credit of three hours each.) This arrangement allows and encourages the student to go in two directions at once (one traditional and one focused interdisciplinary), both within the time usually spent as an undergraduate.

1. *Three courses in major department,* and *six courses outside major department* (including:
   American Studies 301 (required)
   American Studies 303 (required)
   Four other approved courses outside major department)

2. *Four courses in major department,* and *five courses outside major department* (including:
   American Studies 301 (required)
   American Studies 303 (required)
   Three other approved courses outside major department)

3. *Five courses in major department,* and *four courses outside major department* (including:
   American Studies 301 (required)
   American Studies 303 (required)
   Two other approved courses outside major department).

(In each of the above examples the student is allowed by his major department to credit at least 12 hours toward the major courses for his degree if he so wishes, and in the last example, 15 hours can be so credited.)

To meet the requirements for the emphasis, a student also must have at least a 2.0 average on the courses taken at UNCC which are offered for the emphasis. Students in this program will be advised by that person in the department of the major designated to advise American Studies students. Variety of experience is encouraged. American Studies students are also encouraged to take parallel courses during the same semester when possible (e.g., Southern history and Southern literature during the same semester). The degree will be in English (American Studies) or History (American Studies) and will be so indicated on the student's transcript.

COURSE DESCRIPTIONS

AMERICAN STUDIES 301. INTRODUCTION TO AMERICAN STUDIES. (3) To be taken by all students taking an emphasis in American Studies. Should be taken by them no later than the junior year and sooner if possible. An introduction to the rationale of American Studies and an application of it to a small span of American chronology to reveal the interrelationships of as many facets of American culture as possible. For example, the student might be helped to see the interrelatedness of such things as philosophy, religion, literature, music, politics, science, business and industry, art, etc., in the United States during a single decade, the significance of that interrelatedness, and how to apply for himself the same approach to other periods. (Not limited to American Studies students. Can be counted as a humanities course for general degree requirements.)

AMERICAN STUDIES 303. INDEPENDENT STUDY OR DIRECTED READING IN AMERICAN STUDIES. (3) May be repeated once for credit, with permission of the student's adviser. (Not limited to American Studies students but should be under the supervision of an American studies adviser or someone designated by him. Can be counted as a humanities course for general degree requirements.)

AMERICAN STUDIES 350. TOPICS IN AMERICAN STUDIES. (3) To be offered from time to time to supplement courses available, to offer an American focus not available elsewhere in the University, or to provde cross-disciplinary courses with an American focus. For example, courses on American literature and art, American philosophy and politics, etc., might be made available as their being offered is deemed appropriate. May be repeated for credit with permission of the student's adviser. (Not limited to American Studies students. Can be counted as a humanities course for general degree requirements.)

The following additional courses have been approved for the American Studies emphasis. However, appropriate deletions may be made from time to time. The American Studies advisers will have up-to-date lists. Also, consideration will be given to approval of other courses of special interest to the student, especially topics courses or individual study, if pertinent to American Studies.

(*Courses with an asterisk are especially recommended for American Studies students.)

English: 204, 341, 342, 343, 344, 345, 347, 348, 349, 355, 441, 445;
History: 103, 104, 371, 372, 374, 375, 377, 378, 379, 380, 386, 391, 393, 414*, 415*, 416;

Economics: 370;

Liberal Engineering: 311;

Black Studies: 101, 102, 203, 204;

Philosophy: 317*;

Religious Studies: 204, 331*, 332, 433;

Social and Behavoiral Sciences: 397, 398;

Criminal Justice: 438, 439, 449, 478, 479, 488, 489, 490;

Geography: 303*, 304;

Earth Science: 341*, 354;

Political Science: 110*, 301, 303, 305, 307, 309, 311, 312, 313, 314, 315, 316, 317, 318, 319, 321, 322, 357;

Sociology: 271, 310, 321, 325, 432, 480.

AFRO-AMERICAN & AMERICAN STUDIES

Director: Associate Professor Maxwell
Assistant Professor: Norman
Lecturer: Swann

The Afro-American & African Studies Program is divided into four phases which have corresponding courses applicable to each year in the undergraduate curriculum.

PHASE I. WHO AM I? The controlling objective of Phase I is to initiate awareness and exploration. This process involves both personal and intellectual growth in all areas of academic, social and communal relations with yourself and those around you. In an effort to help incoming students adjust to the diversities of the college curriculum, a series of courses has been grouped together to form the Freshman Block.

A major part of the Afro-American & African Studies Program is the Human Relations Lab at the beginning of each year. The lab, commonly referred to as "The Encounter," helps the student in his academic course of study. Through a series of three-day sessions, the student is helped to develop skills in communication, group participation, listening, setting goals and effectively pursuing them.

Fall Semester	*Spring Semester*
Black Experience 101	Black Experience 102
English 101	English 102
Math 101	Electives
Psychology 101	
History 103	
Sociology 151	

PHASE II. WHY AM I HERE? The controlling objective of Phase II is to deepen the self-awareness begun in Phase I and to awaken in the student an appreciation of Afro-American culture in the aesthetic and social realms. The primary courses for Phase II include:

Afro-American Culture I—a survey course which analyzes the Black experience through literature, music, drama and art.

Afro-American Culture II—a survey course which examines social, political, economic and educational institutions from the Black perspective.

PHASE III. WHERE DID I COME FROM? The controlling objective of Phase III is to develop the skills and provide the framework necessary to help the student move to a higher level of theorizing and exploration. The primary focus of Phase III includes:

Research Methods—the design of a research project from the Black perspective with emphasis on developing sound research methods.

Experiential Learning—the purpose is to draw up an hypothesis from the total learning experience in Phases II and III, which the student hopes to validate.

PHASE IV. WHERE DO I GO FROM HERE? The controlling objective of Phase IV is to provide a process through which the student can answer the question, "Where Do I Go From Here"? By means of a senior project and participation in a seminar with others engaged in research in Afro-American and African Studies, the student will attempt to appraise where he is now, given his personal and academic growth in the first three phases: The primary focus for Phase IV includes:

Participation in the Human Relations Lab
Senior Seminar
Senior Project
Certification by the Advisory Committee

From Phase I to Phase IV, the curriculum is structured to aid not only in the academic development of the student but also in the development of his entire being.

Community Projects

Involvement in the Black Community is essential in all phases of the Afro-American & African Studies Program. It is here that students utilize their skills in learning and communication.

PHASE I students may participate in various tutorial programs and give valuable assistance to senior citizens. Sample areas of involvement:

Elementary Schools
Junior High Schools
Senior High Schools
Green Acres Rest Home

PHASE II AND PHASE III projects emphasize the aesthetic and social realms of Black life and are open to intuitive explorations and experimental research. Sample areas of involvement:

Oyo Tunji Village
Kwanzaa
Charlotte-Mecklenburg Afro-American Cultural and Service Center
Development of Independent School
Black Business Enterprises
Student's Trip to Africa
Charlotte City Police Department
Mental Health & Allied Services
WGIV
Legal Aid Society

PHASE IV projects should be geared to extensive research in both African and Afro-American Studies.

COURSE DESCRIPTIONS

AAA 101. THE BLACK EXPERIENCE I. (3) Core course for all students with an interest in the personal development of Black awareness. Opportunities for exploration of self definition and development of interpersonal relationship skills which will create and facilitate effective community dialogue and action.

AAA 102. THE BLACK EXPERIENCE II. (3) Prerequisite: AAA 101 or the consent of the instructor. Core course for all students with a desire for further personal development of Black awareness. Student orientation to experiences involving a Black perspective. Insight concerning the significance of an Afro-American experience as a relevant and serious topic for study and examination.

AAA 203. AFRO-AMERICAN CULTURE I. (6). A survey course which analyzes the Afro-American experience through literature, music, drama, and art. Research and creative action projects will be required.

AAA 204. AFRO-AMERICAN CULTURE II. (6) A survey course which examines social, political, economic, and educational institutions from the Black perspective. Examination of these institutions in part through directed field work.

AAA 350. TOPICS IN AFRO-AMERICAN AND AFRICAN STUDIES. (3) Treatment of a special topic. May be repeated for additional credit with approval of the director.

AAA 390. RESEARCH METHODS. (3) Prerequisite: completion of Phase II or consent of the instructor. The design of a research project from the Black perspective with emphasis on developing sound research methods.

AAA 401. SENIOR SEMINAR. (3) Prerequisite: completion of Phase III; corequisite: AAA 499. Reading, discussion, reports. Peer critique of conceptualization, methodology, and research of senior project. (May be repeated for credit with consent of Advisory Committee.)

AAA 490. HUMAN RELATIONS LABORATORY. (1-3) Prerequisite: completion of Phase III and invitation of the instructor. Certain Phase IV students will be given opportunity to develop laboratories in human relations with students in Phase I, II, and III.

AAA 492. COLLOQUIUM. (3) Prerequisite: consent of the instructor. A weekly colloquium for students engaged in research and writing to provide opportunity for mutual stimulation, critique, and problem solving. Not open to majors for credit.

AAA 499. SENIOR PROJECT. (3) The writing of the senior thesis or work on an equivalent project. (May be repeated for credit with consent of the Advisory Committee.)

DEPARTMENT OF CREATIVE ARTS

Acting Chairman: Assistant Professor Beasley

Art — *Associate Professors:* Anderson, Mason
Assistant Professors: Bringle, Byrum, Hill, Hybel, MacKillop, Soellner
Instructor: Wofford
Lecturer: Law

Dance: — *Assistant Professors:* Sofras, Zimmermann

Music: — *Professors:* Booth, Mathis
Associate Professors: Dailey, Glazer, Reid
Assistant Professors: Langley, Mosley, Turner
Instructor: Kennedy
Lecturer: Gehner

Theatre: — *Associate Professors:* Rackley, Reed
Assistant Professor: Beasley
Instructor: Croghan, Pellenberg, Bays

BACHELOR OF CREATIVE ARTS DEGREE PROGRAM

Introduction

The BCA offers each student more than just a degree in the creative arts. First, it places initiative on the individual student and his ability to perceive relationships (problem-solving). Second, it offers a new relationship between student and teacher. Rather than dividing students into classes, feeding them information and expecting all students to assimilate the same material identically, the faculty member serves as an adviser and resource person.

Third, it allows the student to explore facets of the arts which interest him and relate to his talents. Finally, recognizing that education extends beyond the bounds of mastering only one art, the student is encouraged to explore all aspects of creativity, the arts and their relationship to the individual and his development. To accomplish this, the student has at his disposal all of the University's resources.

Admission to the Program

Upon admission to the University of North Carolina at Charlotte, a student may apply for admission to the Bachelor of Creative Arts program. The prospective student will be requested to interview with the faculty from the major area of his interest: art, dance, music or theatre. Additionally, a student will be asked to audition, submit a portfolio and generally give as thorough an accounting of

his background as possible. Within a reasonable amount of time after his interview, a student will receive notification of the success of his application to the Bachelor of Creative Arts program.

MECHANICS OF THE PROGRAM

A. Eligibility: The program is open to all students eligible for admission to the University of North Carolina at Charlotte. Since the program is flexible and organized around the individual student's motivation and interests, a student may enter the program from another division within the University or transfer from another institution. Evaluation of traditional credits is necessary since the experiential aspects of seeking and discovering relevance and relationships is a subjective process and since the student's thrust, interest and pace are his own. Advancing through the program and the completion of the degree are determined by the continuing process of evaluation (see next page).

B. Transfer Students: Any person from outside the Creative Arts Department coming into the BCA program is considered a transfer student.

C. Withdrawal: The faculty and the student involved in the total efforts of a student who is withdrawing from the program will equate his work into conventional hours credit, including grades and quality points. Additionally, a prose record of evaluation will become a part of the student's permanent record at this institution, to be shared with the institution being transferred to if that institution so desires.

D. Central Information Chart: A continuous running calendar blocked off into days has been set up. The following information is communicated by means of this calendar: activity, date, time, leader, etc. These will be posted by individual faculty members prior to the activity. Time conflicts can be minimized by checking the CIC before scheduling the activity.

E. Structural Method:

1. General Contractual Procedure: a. The student writes a proposal that states and defines a problem at its beginning and indicates a possible direction toward a solution. b. If a change of direction or completion date is undertaken before the final evaluation, the project adviser must be consulted. c. Reviews are in oral and/or written forms. The reviews of the students' works are done by the student, his fellow students and the adviser(s). d. The master review is kept on file in the office of the Creative Arts Department until graduation. (The student and his adviser receive a copy of each master review report.)

2. Seminars: Seminars and group sessions cited in the out line are both scheduled and free-forming interacting

groups, focusing on specific common interests and problems.

3. Review and Evaluation: Because of the nature of the program, the student's major adviser and his other mentors are constantly involved with the student in evaluating. The program is intended to develop within the student honest self-examination and self-evaluation. The success of the student will, to a great degree, be determined by his own increasing ability to assess and evaluate his own potential, commitment and accomplishment. Semester and yearly evaluation procedures (see below) serve an educative function in that they involve the student in self-evaluation and in confrontation with evaluation by his peers and his instructors.

   By the end of each semester, evaluation of the student's progress will have been made by the student's advisee group, consisting of faculty and students. This will follow a self-evaluation. The grade designation will be:

   P - PROGRESSING
   S - SATISFACTORY
   U - UNSATISFACTORY

   Since the evaluation is based on the student's moving toward becoming an independent, self-motivating learner, only one grade will be assigned.

   The grade of *P* reflects awareness and in-depth involvement within the evaluation guidelines.

   The grade of *S* reflects momentum towards realization of the evaluation guidelines.

   The grade of *U* reflects a lack of interest, participation and motivation towards realization of the evaluation guidelines.

   Since the program is geared to the student's specific interests and insights, a student whose evaluation is unsatisfactory will be encouraged to reassess his goals and his desires and abilities to move productively on his own.

   This reassessment will be done by the student's group. This effort will be toward helping the student determine the field and the structure in which he can function more productively, rather than simply eliminating him from the Creative Arts program.

. Teacher Certification: Teacher certification through the BCA requires: 1. A student must declare certification intent at least four full semesters prior to the awarding of his degree. 2. The student must demonstrate proficiency in communication and

humanities; natural, social and behavioral sciences; psychological and sociological foundations of education; parent-school-community relationships; curriculum activities and techniques; and materials, methods and practices appropriate to the teaching area and level. A student must show an awareness of the various educational philosophies relating to the arts. 3. Student teaching may be done in connection with projects. The 150 hours required in actual classroom teaching may be carried on within the eight semester residency as the student feels the need to put himself in teaching situations.

G. Residence: The complete program will require a minimum of eight semesters, the final two of which must be done in the BCA program. A full semester term is equal to one semester. For a transfer student, any semesters completed before entering the program will apply toward this minimum.

H. Completion of Degree

1. Recommendation by principal professor, by one other professor in the field and by two professors from outside the candidate's field.

2. Appraisal of candidate's portfolio, manuscripts or performance by the principal professor and by three other professors.

3. Recommendation by a review board of two students from candidate's field.

I. *First Year*

A. *Art*

A first year program designed to offer the beginning student in art:

1. A thorough orientation to the objectives of the BCA program and the personal involvement necessary to achieve independent status.

2. An understanding of the basic visual fundamentals, principles and art theory necessary to the formulation of projects and independent research.

3. A format for learning that offers an alternative method of education in the arts, with emphasis on the interrelationship of the arts and the other academic areas.

4. An opportunity to work independently, and in groups, with students of similar needs, directions and levels of artistic development.

5. An opportunity to fail with recourse for establishing positive new directions.

6. An opportunity to work with experienced students in the program to help establish sound working patterns necessary for personal achievement and satisfaction.

7. A foundation for the development of personal as well as artistic maturity.

8. The responsibility of learning to design one's own educational future.

9. An opportunity to work with all area coordinators and faculty to help orient your needs as a first year student.

10. An opportunity not every student can handle or cope with, the first year program is designed to help the student move as gracefully as possible in his educational process, but this method is not guaranteed for all. The student will be asked to make this evaluation the first year.

Semester I

Phase I
2 wks.

Orientation to the BCA
Seminars, workshops, experience in learning.

a. What is the BCA? (The philosophy, specific and general.)
b. Role of student
c. Role of adviser
d. Role of coordinators and chairman
e. Role of peers, peer evaluation, advisee group
f. Resource persons and faculty
g. Role of artist as problem former and solver
h. Problem solving techniques
i. Why paper work is necessary and who is responsible
j. Summation of mechanics, individual roles, philosophy and responsibilities

Phase II
6-7 wks.

Presentation of seminars by various faculty and faculty teams of visual fundamental and interrelated principles.

a. Project formation as related to the elements of design
b. Project formation related to principles and fundamental theory

c. Criticism and evaluation - project work
d. Art area faculty seminars
e. Tri-area seminars - small groups on project design
f. Art history block - flexible
g. Summation and analysis

Phase III *2 wks.* Making contacts outside the BCA and Rowe Arts Building

a. Short term projects outside Rowe Arts testing relationship of the art and the artist to other academic areas.

Phase IV Participation in faculty advisee group meeting and interest area seminars.

a. Responses, questions, summation
b. Semester evaluations

Semester II *Phase V* *6-8 wks.* Continuation of visual fundamental seminars as pertaining to specific areas and media

a. Working more with applied faculty
b. Formulation of possible interest areas and directed study.
c. Media survey and exploration seminar work.
d. Project continuum theory - what is the need?
e. Summation

Phase VI *2 wks.* Mock project proposal and critical analysis

Phase VII *2-3 wks.* Actual project work reference to visual fundamental exposure and evaluation by entire freshman group, coordinator, related faculty.

Phase VIII Assignment of advisers by April 15, analysis of first year program and screening for students seeking second year status.

The first year program adviser is responsible for the freshman student's progress through the entire first year. The student is responsible to this adviser by attending weekly group meetings and individual advising sessions.

Music

1. The Phase One program in music is designed to smooth the transition for freshmen and transfer students from a structured educational environment to an unstructured one. Each new student in the Bachelor of Creative Arts must make this adjustment in order to embark upon a program involving self-motivation and initiative. An attempt is also made in the Phase One program to clarify the ideal of the BCA program and to give practical experience to each student in the problem-solving technique. It is hoped that during the first year, the student will begin to develop a perception of the arts as they relate to one another.

   A. Orientation discussions: Sessions to help the student understand how he can best develop his abilities in the BCA program. These discussions will include descriptions of how we go from the specific to the general; that education can be achieved through music, rather than the education being assimilated in order to "get at" art.

   B. Define goals: Each student expresses his educational and professional goals. This is necessary in order to help him determine his course of study at UNCC. Consideration is made as to not only "What basic skills do I need?," but "What kind of person is needed to carry out this plan successfully?"

   C. Identify resources: Procedures for use of the library and the Rowe listening lab are outlined. The Rowe Project Board and music area Resource Board are introduced. Workshops and seminars and the procedure for establishing both are described.

   D. Specialized resources established: Faculty members are introduced and their special fields of interest described. Students then identify their principal or "applied" professor, and an association is established. Ensemble work is encouraged and organized for instrumentalists and vocalists, and composers are organized into a peer group. Teacher certification is discussed and interested students identified.

2. Group Activity: Designed to demonstrate how one can begin with sound and learn about music: a beginning in process of starting with music and learn-

ing about other aspects of education as they relate to music.

A. Melody. Through the study of a melody, the group will consider notation, ear-training, theory, style, color, shape in music.

B. Harmony. Using their own melodies, the students will discuss tonal and non-tonal techniques of composition. Style and the effect of different styles will be considered, thus incorporating the related fields of psychology, acoustics and history, to name a few.

C. Rhythm. Motion and speed will be discussed.

D. Tone color. The drawing together of these experiences with melody will be the expression of the melody in its intended medium. This may necessitate the study of instrumentation, vocal potentials, electronic devices, ancient performance practices or, simply, development of the composer's ability on his instrument.

3. Project. Association with the applied professor will result in the emerging of a piece of music as a significant concern for the student. A project will evolve, and, as it does, the group will help the student develop the project's many facets. Procedure for drawing up a project proposal will be outlined and presentation of the project described.

4. At the completion of a project, the student will be evaluated by a group consisting of his major adviser, his applied professor (project adviser) and his advisee group, perhaps including peers who are not in the advisee group.

C. *Theatre*

Freshman theatre students, as well as transfer students without a background in theatre, form a peer group. It is desirable to have these students in one group in order to satisfy two needs:

1. the need to have freshmen understand the concepts and mechanics of the Creative Arts program with some consistency;

2. the need to provide freshmen students with a forum in which they can discuss problems knowing that no one in the group is more experienced in dealing with such problems—a lessening in the students' fears of intimidation and ridicule.

Each adviser is responsible for assuring that the freshman is acquainted with and exposed to the other members and upperclassmen. In addition to whatever exposure the student seeks on his own, he will be in contact with other Creative Arts faculty members through productions, workshops and seminars.

The transfer student or freshman with a background in theatre would be duplicating experience needlessly should he/she be a member of this group. Therefore, such students are assigned to other faculty members as advisees. These students are encouraged to attend sessions with freshmen which deal with the concepts and mechanics of the Creative Arts program. Such a decision, however, should be made by the adviser and the student.

1. Conferences with Adviser:
   Each student in the first year program meets with his/her adviser at frequent intervals during his/her first year. During these meetings discussion centers around three major topics:
   A. A determination of the student's interests and level of artistic and humanistic development;
   B. The establishment of a program of study for the first year designed to strengthen the student's major interest area and to offer fundamental skills and a basic orientation into other areas of the theatre arts;
   C. The development of the student's awareness of various resources—including people, books, seminars, etc.—pertinent to the student's interests and personal growth.

2. Participation in Theatre Productions:
   Each freshman and transfer student is expected to participate in some aspect of each theatre production offered by the Department of Creative Arts during the year. Involvement must not be limited to the student's major interest. The student should seek experience in as many phases of theatrical production as possible; acting, stagecraft, stage lighting, costuming, properties, sound, make-up, publicity, front-of-house and, in some cases, design and directing.

3. Workshops:
   Workshops will be organized to augment the student's experience in the area of his/her major interest and to supply fundamental knowledge, skills and experience in other areas of theatre. Workshops in the student's major interest, if one is developed by this point, may be continued. These workshops will be staffed by members of the theatre faculty and by advanced, qualified students.

D. *Dance*

In addition to familiarization with the philosophy and mechanics of the Creative Arts Program, the goal of Phase I is to expose students to basic skills in contemporary dance. The Phase I program would offer:

1. Workshops in basic technique and theory of contemporary dance styles
   a. modern dance daily for 1½ hours per session
   b. ballet twice a week for 1½ hours per session

2. Exploratory movement workshops
   a. improvisation
   b. movement technique based on the principles of dance
   c. movement motivation

3. Workshops in areas related to dance
   a. participation in relevant aspects of Theatre's Phase I program (lighting, costuming, make-up design, acting)
   b. participation in relevant aspects of Music's Phase I program

The students would be expected to be involved in dance concerts, either as performers or as technicians, and to participate in special seminars offered by guests or other faculty members of the BCA program.

His/her exploratory experiences should be augmented by individual studies, developed by the student in consultation with the adviser and advisee group. Research into other dance forms (mime, jazz, ethnic) and related theoretical studies (anatomy, kinesiology, dance history) is encouraged.

Involvement in Phase I may last as long as two years. It will end whenever the student, in consultation with his/her adviser and advisee group, has developed a basic level of competency in dance skills as outlined above and feels the need to pursue a specific aspect of dance such as teaching, choreography, or performance.

While in Phase I, some students may wish to change their major. They should be encouraged to do so at this point in their development.

II. *Second Year*

Conferences with consulting professors (to be arranged). The student, with his major adviser, plans a course of study tailored to his interests and needs. Such a plan would involve consultants from various departments in the University who would serve as resource mentors.

Music

1. Musicianship studies

    a. Independent projects: Study areas are to be determined by the student's special interests and skills; such as counterpoint, composition, orchestration and conducting. Such interests as the musical significance of the historical development of instruments, the psychological and physiological mechanisms of the production and perception of sound and the cultural milieu of certain musical styles should lead the student to investigations involving fields other than the Creative Arts.

    b. Seminars: These seminars involve the topics arising from independent projects. The purpose is to present an integrated view of the evolution of music—its literature, theory and changing compositional and performance practices.

2. Performance studies

    a. Individual

    b. Ensemble

Visual Arts

1. Studio

    a. General floating seminars, e.g., Visual Fundamentals, Methods, Techniques, etc.

    b. Individually oriented investigations. The student could choose one, two or three interest areas to pursue concurrently or consecutively. These investigations might include both highly specialized art areas and topics which would cut across departmental boundaries. For example, studies in the technical aspects of ceramics or color or sculpture could lead the student toward chemistry, psychology or history. Painting, depending on interest in styles, could lead to poetry, mathematics, iconography, history and anatomy.

    c. Consulting professor and one other visual arts instructor. Professors from other departments are also invited if a topic demands more precise information.

    d. This could also relate art history to the specific topics of investigation the students are currently pursuing.

C. *Theatre*

1. Studio—Student chooses one of the following areas:

a. Acting and Directing

(1) Group - Skill in the use of voice and body.

(2) Group - Inner technique: Improvisations, theatre games, mime, sensory and emotional exercises.

(3) Individual or group - individual projects in characterization. Group work on current major or student-directed workshop productions.

b. Designing

Individual projects in theatre design. The student and his consulting professor work out individual and group projects in theatre design correlating these with the student's art and/or projects.

c. Writing

(1) Individual writing projects under the guidance of theatre staff and consultants. This project might be geared to workshop productions.

(2) Group discussions and criticism of student manuscripts.

2. Studies in dramatic literature

Group and individual programs of reading and research determined by each student's interest and coordinated with his work in acting, directing, writing or design.

(3) Colloquium

Theatre is the context of selected historical periods-readings, discussions, lectures, research.

III. *Third and Fourth Years*

A. *Assignment of Creative Arts Adviser*

1. The student and his major adviser plan specific projects in the student's area of major concern, e.g., violin, painting, directing and education in the arts.

It is important, however, that the planning of such projects will assist the student to an ever greater

awareness of his need to move from the specific to the general.

2. The student's third and fourth years of study operate largely on a contractual basis. Therefore, time allocations and projects pursuits are more flexible from semester to semester.

B. *Seminar/Workshops*

1. Seminar/workshop offerings could be changed, expanded, etc., to meet the needs and interests of the students. Seminar/workshops are for all Creative Arts students.

2. Seminar topics would deal not only with the arts but also with more general and interrelated issues concerning the human condition.

3. Examples of seminar/workshop topics:

   a. Aural, kinetic and visual environment—past, present, future.

   b. Professional—problems of interviewing, procedures of job-seeking, publication, exhibitions, performances, etc.

   c. Selected topics in painting, sculpture, counterpoint, playwriting, orchestration, fiction, etc.

   d. Selected topics in aesthetics.

   e. Arts in urban life.

   f. Abstraction, e.g., mathematical formulae, logos, musical and dance notation, etc.

   g. Selected topics in arts education, e.g., music education for elementary teachers, art education for elementary and/or secondary teachers.

ected Projects

Since the program is concerned with the self-thrust of the ividual student in the process of discovery in preference to osure to a body of selected materials, the opportunity for olvement of the non-creative arts major is greater. The non-major l be free to proceed into the program under various seminars open oth creative arts and non-creative arts majors. The non-major l register for the courses CA-071 (Instrumental Music) and/or -081 (Chorus) for one hour credit; CA-213A, 213M, 213T, 213D for ee hours credit, and CA-214 for four hours credit. Students enroll- in these sections will receive a grade according to the Uni-

versity-wide grading system. Beyond the initial seminar, the philosophy of work in the Creative Arts will be based on the same principles as those for the Creative Arts major.

Any regularly enrolled UNCC student other than BCA majors may elect Directed Projects and, subject to the approval of an adviser develop a project which focuses upon the student's unique interest and abilities.

A project may take the form of research, studio lessons, the study of music literature, ceramics, sculpture, painting, writing or countless other forms of the student's devising.

Students electing Directed Projects will need to see the assigned adviser at the first meeting, as designated on the schedule.

Ensemble

MUS 071. (1) Instrumental Ensemble. May be repeated for credit. Credit limited to one semester hour per semester. Prerequisite: consent of instructor.

MUS 081A, (1) Oratorio Choir. Open to anyone. May be repeated for credit. Credit limited to one semester hour per semester.

MUS 081B. (1) University Chorale. Audition required. May be repeated for credit. Credit limited to one semester hour per semester.

DEPARTMENT OF ENGLISH

Chairman: Professor Burn
Professors: Ellis, Mason, McCall, Moose, Denny (Emeritus), Varnas, Wallace (Emeritus)
Associate Professors: Carver, Davis, Gatlin, Hedges, Shapiro
Assistant Professors: Amante, Frazier, Grey, Harper, McGavran, Meyer, Newman, Petrakis, Robinson, Smedman, Stone, Watson
Instructors: Bowen, Horton, Keuling, Selde
Lecturers: D. McGavran, Timso
Lecturers (part-time): Barden, Brown, Cofer, Creswe, Graham, L. Grey, Imschweiler, Lovell, Parris, Rankin, Reed, Rothwell, Williamso

A major in English leading to the B.A. degree (except for studen in the early childhood teacher certification program) consists of semester hours of course work above the 100 level. All Englis majors must take English 101 and 102 (unless exempted). Cour requirements at the 200 level shall consist of a minimum of six hou taken from among the following courses: 201, 202, 203, 206, 207, 20 211, 212. A maximum of 12 hours from among these courses m count towards the English major. Prerequisites for 200-level cours are English 101 and 102, or the equivalent; 102 may be taken cc currently with a 200-level course with the consent of the depa ment. Requirements above the 200 level are as follows: (a) o

merican literature course; (b) one British literature course, pre-800; (c) one British literature course, post-1800 (including the omantic period course). Prerequisite for all 300- and 400-level ourses is at least one course at the 200 level.

The above requirements apply to the regular English major and o those students seeking teacher certification on the secondary evel. Students in the secondary certification program are required o take six hours in English language or composition beyond 101-02, and consult with the College of Human Development and earning regarding other courses required for certification.

Students seeking early childhood (K-3) certification must major n Human Development and Learning. However, the English epartment offers a Helping Specialty, or academic concentration, n language and literary study which HDL majors may elect; and hese students can also double major in HDL and English. Addi-onal information about these options is available from the English epartment and the College of Human Development and Learning.

Reminder: English majors and students with a Helping Spe-alty in English who are seeking certification at any teaching level ust have a minimum grade point average, in English courses, of 5 to be admitted to candidacy.

Note: Whenever a student is admitted to the English Department s a major, he is to be told by the department in writing that his atus is conditional upon: his making at least a *C* average in the st nine hours of English taken *here;* and upon his making at least *C* average on the papers written for all his English courses nsidered together. If he has the *C* average on courses but not on pers, he may take further work in composition and may qualify lly as an English major if his composition instructor approves. If e meets the above standards, the department will admit him in riting to full status as an English major.

If his average on English courses falls below 2.0 at any time or his mposition falls below average, there is to be a conference between e student and his adviser as to his continuing status as an English ajor.

COURSE DESCRIPTIONS

NGLISH

NG 099. ENGLISH AS A FOREIGN LANGUAGE. (no credit) mited to students whose native language is not English who may ed additional preparation for their regular academic work, includ-composition courses.

NG 101-102. ENGLISH COMPOSITION. (6) Introductory dings in varieties of literature and intensive practice in critical d expository writing. (NOTE: To complete the general degree quirement of six hours of English, a student should take 101 (3),

and three of the one-hour five-week courses numbered 102. English 101 is prerequisite to 102).

ENG 201. ENGLISH LITERATURE. (3) Prerequisites: ENG 101 and 102. Intensive study of masterpieces of British literature in chronological sequence before 1800.

ENG 202. ENGLISH LITERATURE. (3) Prerequisites: ENG 101 and 102. British literary masterpieces since 1800.

ENG 203. MASTERPIECES OF MODERN FICTION. (3) Prere quisites: ENG 101 and 102. Readings in selected novels and shor stories written since 1850.

ENG 204. MASTERPIECES OF AMERICAN LITERATURE. (3 Prerequisite: ENG 101 and 102. Extensive readings in six to eigh authors, approximately half from the nineteenth century and hal from the twentieth century, both poetry and prose. Recommende for non-English majors who are working for certification. Does no count toward an English major.

ENG 206. FILM CRITICISM. (3) Prerequisites: ENG 101 and 102 An introduction to film as an art form. Emphasis will be on critica theory and on critical analysis of the form the content of differen kinds of films—e.g., the narrative film, the silent film, the docu mentary film, etc.—drawn from the international cinema. Student will apply critical theory to the analysis of professionally mad films and will have the option of making their own short films.

ENG 207. CRITICAL APPROACHES TO LITERATURE. (3) Pr requisites: ENG 101 and 102. An introductory study of critica methods, such as mythological, psychological and existential, an practice in analyzing and evaluating literature. Limited to Englis majors and those having the permission of the department.

ENG 208. INTRODUCTION TO DRAMA. (3) Prerequisites: EN 101 and 102. An introduction to the major principles and types drama, using representative plays from the major periods of dram classical to modern.

ENG 211. MASTERPIECES OF WORLD LITERATURE I. (Prerequisites: ENG 101 and 102. Readings in Greek, Latin ar Eastern works in translation.

ENG 212. MASTERPIECES OF WORLD LITERATURE II. (Prerequisites: ENG 101 and 102. Readings in Medieval, Rena sance, and Modern European literature in translation.

NOTE: Prerequisite for 300 or 400-level courses: three semest hours of English on the 200 level, unless otherwise specified.

ENG 301. GREEK AND ROMAN DRAMA IN TRANSLATIO (3) A study of selected plays of Aeschylus, Sophocles, Euripid Aristophanes, Platus, Terence, and Seneca with emphasis dramaturgy and the development of the Greek and Roman theat

NG 303. CHILDREN'S LITERATURE. (3) Critical study of epresentative reading materials and approaches to literature appropriate for elementary school children. Does not count toward an nglish major.

NG 313. MILTON. (3) The major poems and selections from the inor works.

NG 316. SHAKESPEARE'S EARLY PLAYS. (3) A study of 10 epresentative plays from the Comedies, Histories and Tragedies ritten between 1590-1600.

NG 317. SHAKESPEARE'S LATE PLAYS. (3) A study of 10 representative plays from the period 1600-1611, including the late Tragdies and Tragi-comedies.

NG 323. ENGLISH LITERATURE, 1600-1785. (3) Poetry and rose from Dryden through Johnson; collateral readings in drama nd the novel.

NG 325. THE ROMANTIC ERA, 1785-1832. (3) The development of the Romantic movement with emphasis on the works of ordsworth, Coleridge and other major poets.

NG 326. THE VICTORIAN ERA TO 1870. (3) Emphasis on ennyson, Browning, Arnold, Carlyle, Ruskin and Newman.

NG 327. ENGLISH LITERATURE FROM 1870-1914. (3) British erature from Walter Pater to the 1st World War.

NG 328. BRITISH LITERATURE SINCE 1914. (3) The chief ritish writers and literary movements from World War I to the esent.

NG 332. INTRODUCTION TO MODERN ENGLISH. (3) An troduction to the phonology and grammatical structure of present-y English, with some consideration of word formation, changes in eaning, dialectal differences and problems of usage.

NG 341. AMERICAN LITERATURE, 1820-1870. (3) The portant writers and literary movements from Irving to Whitman.

IG 342. AMERICAN LITERATURE, 1870-1920. (3) The portant writers and literary movements from Whitman through period of World War I.

IG 343. AMERICAN LITERATURE, 1920 TO PRESENT. (3) e important writers and literary movements from the twenties to present.

G 344. THE AMERICAN NOVEL OF THE NINETEENTH NTURY. (3) Major novelists and traditions from the beginngs of the American novel through the rise of realism, with prirry attention to approximately eight or 10 representative novels.

ENG 345. THE AMERICAN NOVEL OF THE TWENTIETH CENTURY. (3) Major novelists and traditions from the emergence of naturalism to the present, with primary attention to approximately eight or 10 representative novels.

ENG 347. EARLY BLACK AMERICAN LITERATURE. (3) A survey of significant writings by Black Americans before the Harlem Renaissance.

ENG 348. TWENTIETH CENTURY BLACK AMERICAN LITERATURE: PROSE. (3) An intensive study of selected black American twentieth century writers of fiction and non-fiction, beginning with the Harlem Renaissance.

ENG 349. TWENTIETH CENTURY BLACK AMERICAN LITERATURE: POETRY AND DRAMA. (3) An intensive study of selected Black American twentieth century writers of poetry and drama beginning with the Harlem Renaissance and including the Black Arts Movement.

ENG 350. TOPICS IN ENGLISH. (3) May be repeated for additional credit with approval of the department. Prerequisite: consent of the department. This course is designed to offer special topics not included in other courses.

ENG 351. LITERARY CRITICISM THROUGH ARNOLD. (3) The major schools and critics.

ENG 352. INDEPENDENT STUDY. (1 to 3 semester hours credit) May be repeated for additional credit with approval of the department. Prerequisite: consent of the department. Individual investigations and appropriate exposition of the results.

ENG 355. INTRODUCTION TO AMERICAN FOLKLORE. (3) An introductory course in which the nature of folklore and the various genres of folklore are discussed. Though all folk-genres are considered, the emphasis will be upon the literary genres of the folktale and the folksong. (Does not satisfy the American literature requirement for English majors.)

ENG 400. ENGLISH PRACTICUM. (3) Designed for the English major who is also preparing to teach, introduces the student to current issues facing the English profession, acquaints the student with a variety of methods for teaching both composition and literature, and, through related experiential work, provides the student with practical experience in the teaching of English prior to his student teaching semester.

ENG 412. ENGLISH LITERATURE FROM THE BEGINNING TO 1500. (3) A systematic survey of English literature from the beginning to the end of the 15th century, excluding Chaucer. All the works studied in this course will be in translation.

ENG 305. EXPOSITORY WRITING. (3) The writings of essays, criticisms and various forms of exposition.

ENG 306. INTRODUCTORY CREATIVE WRITING. (3) Open to students of at least sophomore standing who have satisfied the requirements of ENG 101 and 102. Writing of fiction, poetry, or drama.

ENG 311. CHAUCER. (3) *The Canterbury Tales, Troilus and Criseyde* and selected minor works.

ENG 321. THE EARLIER SEVENTEENTH CENTURY. (3) Major writers from Bacon and Donne to the Restoration.

ENG 331. HISTORY OF THE ENGLISH LANGUAGE. (3) Origins and development of the English language and its present usage.

ENG 401. MODERN LITERARY CRITICISM. (3) Critical theories of the modern schools.

ENG 405. WRITING WORKSHOP. (3) Prerequisite: ENG 306 and permission of the instructor. May be repeated once for credit with the consent of the department.

ENG 406. ADVANCED EXPOSITORY WRITING. (3) Prerequisite: ENG 305. May be repeated once for credit with the permission of the department.

ENG 413. ENGLISH PROSE AND POETRY OF THE SIXTEENTH CENTURY. (3) The major works, excluding drama, More through Spenser, with attention to the development of the lyric.

ENG 421. THE ENGLISH NOVEL BEFORE SCOTT. (3) Major writers and traditions, Defoe through Jane Austen.

ENG 422. THE NOVEL FROM SCOTT THROUGH THE VICTORIANS. (3) Major writers and traditions through Hardy.

ENG 423. THE MODERN BRITISH NOVEL. (3) Representative British novels showing the philosophies and techniques affecting British fiction, from Hardy to the present.

ENG 424. MODERN IRISH LITERATURE. (3) The study of important developments in Irish literature between 1885 and the death of Yeats (1939).

ENG 431. ENGLISH DRAMA TO 1600, EXCLUDING SHAKESPEARE. (3) A survey of the development of English drama to 1600, with representative plays from the Mystery-Miracle Cycles, the Morality Plays, and Tudor drama, including Lyly, Kyd, Marlowe, Peele, Greene and Dekker.

ENG 432. ENGLISH DRAMA FROM 1600 to 1642, EXCLUDING SHAKESPEARE. (3) A survey of Jacobean and Caroline drama, including plays by Jonson, Beaumont and Fletcher, Webster, Middleton, Shirley and Ford.

ENG 433. ENGLISH DRAMA FROM 1660 TO 1780. (3) Representative plays of the Restoration and Eighteenth Century (Davenant to Sheridan), studied in connection with conditions in the theater and pertinent dramatic criticism of the period.

ENG 441. COLONIAL AND EARLY AMERICAN LITERATURE. (3) American literature from Colonial times to Washington Irving.

ENG 445. LITERATURE OF THE AMERICAN SOUTH. (3) Selected works of Southern writers from Colonial times to the present.

ENG 450. CONTEMPORARY POETRY. (3) Poetry in English (including translations) since 1940.

ENG 451. MODERN DRAMA. (3) Representative British and American plays from Shaw to the present.

ENG 452. MODERN EUROPEAN LITERATURE. (3) The study of selected European authors and their intellectual backgrounds.

ENG 453. CONTEMPORARY FICTION. (3) Study of selected present-day novels in English and in translation.

ENG 455. INTRODUCTION TO PAN-AFRICAN LITERATURE. (3) May be repeated for additional credit with approval of the department, as the geographical emphasis varies. A survey of significant Pan-African literature (Caribbean, West African, East African, etc.) emphasizing both the oral tradition and works of contemporary authors.

ENG 461. MODERN ENGLISH GRAMMAR. (3) Prerequisite: ENG 331 or 332. A descriptive analysis of the structure of Modern English, with emphasis upon the transformational approach.

ENG 465. SOCIAL DIALECTS. Prerequisite: ENG 332 or 461. An introduction to concepts of dialects, predominately in the United States, concentrating on social and class differentiations and incorporating some field-work experience within an interdisciplinary approach. Morphological, phonological and syntactic systems will be emphasized.

DEPARTMENT OF FOREIGN LANGUAGES

Chairman: Professor Gabriel
Professors: Bush, Saman, Slechta, Turner
Associate Professors: Gleaves, Merrill, Reimer
Assistant Professors: Cernyak, Hopper, McLeod, Miller, Park, Rose
Instructors: Bret, Vance

Programs in each of the several foreign languages offered are designed to give a student competence in four skills—understanding, speaking, reading and writing the given language, to acquaint him with the culture and civilization of the country or countries where that language is spoken, especially their literature, and to give him some understanding of the people who speak it. Major programs include advanced linguistic analysis of sound systems and structure and are designed to prepare students for certification by the North Carolina State Department of Public Instruction or graduate work in the major field. Courses above the 202 level are normally taught in the foreign language.

Placement

The Department of Foreign Languages will recommend the placement of a student in a class of a level commensurate with his demonstrated competence at the time of enrollment considered together with his prior language training or experience.

Honors in Modern Languages

The honors program in foreign languages is open both to majors and non-majors who have demonstrated sufficient ability and interest to be capable of guided independent study outside the restrictions of regular course work. Reading for honors in a foreign language may begin as early as the second semester of a first-year course (102), providing the student has been enrolled at the University for at least one semester. Honors students who attain the language proficiency required for the 202 level may choose to read either in the literature or in the civilization of the target culture. Whenever feasible, arrangements are made for non-majors to read in the area of their special interest in cooperation with the department of their major.

Students are invited to enter honors work by recommendation of a member of the department to the Honors Committee for the language concerned. Once accepted for honors work within the department, a student must submit any proposal for a special honors project at least eight weeks prior to the semester in which the work is to be done. A student may drop honors work at any time without penalty (See *University Honors Program).* However, he will not be permitted to reenter the program until the following semester and, in any case, not without review and approval by the Honors Committee.

Laboratory

All foreign language courses at the 100 and 200 level, as well as those numbered 301, 302, and 331, meet for three class hours and one to two hours of laboratory work per week. Whenever warranted, laboratory work may be assigned by the instructor in other courses.

SUGGESTED CURRICULUM LEADING TO A BACHELOR OF ARTS DEGREE IN A FOREIGN LANGUAGE

FRESHMAN YEAR

English 101	3	English 102	3
History 101	3	Mathematics/Elective	3
Foreign Language 201	4	History 102	3
Elective	6	Foreign Language 202	4
		Elective	3
	16		16

SOPHOMORE YEAR

Foreign Language 301	3	Foreign Language 302	3
Literature Elective	3	Foreign Language 3xx	3
Science with lab	4	Science with lab	4
Social Science Elective	3	Math or Logic Elective	3
		Elective	3
	13		16

JUNIOR YEAR

Foreign Language 3xx	3	Foreign Language 4xx	3
Foreign Language 331	3	Literature Elective	3
Creative Arts Elective	3	Philosophy or Comparative Religions	3
Social Science Elective	3	Elective	3
Elective	3	Elective	3
	15		15

SENIOR YEAR

Foreign Language 4xx	3	Foreign Language 4xx	3
Foreign Language 4xx	3	Creative Arts Elective	3
Foreign Language 309	3	Elective	3
Elective	3	Elective	3
Elective	3	Elective	3
	15		15

SUGGESTED CURRICULUM LEADING TO A BACHELOR OF ARTS DEGREE IN A FOREIGN LANGUAGE, WITH CERTIFICATION IN SECONDARY SCHOOL TEACHING

FRESHMAN YEAR

English 101	3	English 102	3
History 101	3	Mathematics 101 (103)	3
Foreign Language 201	4	History 102	3
Elective	6	Foreign Language 202	4
		Elective	3
	16		16

SOPHOMORE YEAR

English 201	3	English 202 (203, 204)	3
Foreign Language 301	3	Foreign Language 302	3
Education 201	3	Foreign Language 3xx	3
Social Science (1)	3	Mathematics or Logic	3
A Physical Science	4	A Biological Science	4
	16		16

JUNIOR YEAR

Foreign Language 3xx	3	Foreign Language 4xx	3
Foreign Language 331	3	Foreign Language 4xx	3
Psychology 201	4	Creative Arts Elective	3
Social Science (1)	3	Psychology 202	3
Health Education 101	1	Foreign Languages 300	3
Elective	3		
	17		15

SENIOR YEAR

Foreign Language 4xx	3	Education 304	3
Philosophy or Comparative Religions	3	Psychology 302	3
Foreign Language 309	3	Education 402	3
Foreign Language 4xx	3	Education 451	6
Creative Arts Elective	3		
Physical Education 101	1		
	16		15

COURSE DESCRIPTIONS

FOREIGN LANGUAGES

Languages offered under these courses are designated by alphabetical listing: A—Greek, B—Hebrew, C—Italian, D—Portuguese and E—Other.

FL 101. ELEMENTARY FOREIGN LANGUAGE. (3-4)* Prerequisite: permission of the department. Fundamentals of grammar and phonetics, reading, writing and conversation.

FL 102. ELEMENTARY FOREIGN LANGUAGE. (3-4) Prerequisite: FL 101 or permission of the department. Continuation of FL 101.

FL 201. INTERMEDIATE FOREIGN LANGUAGE. (3-4) Prerequisite: FL 102 or permission of the department. Review grammar conversation, composition and readings based on culture and civilization.

FL 202. INTERMEDIATE FOREIGN LANGUAGE. (3-4) Prerequisite: FL 201 or permission of the department. Review grammar, conversation, composition and readings based on students' needs.

FL 300. METHODS OF TEACHING A FOREIGN LANGUAGE. (2) Prerequisite: junior standing or permission of department. An investigation into current trends and practices of foreign language teaching with special emphasis on practical applications. Readings, discussions, micro-teaching and observation of classroom situations at all levels. Required of all students seeking certification in the teaching of a foreign language.

FRENCH

The French major offers three options:

A. The French major leading to the B.A. degree consists of FRE 201, 202, 301, 302, 303, 304, 309, 331 and at least 12 hours on the 400 level, including FRE 491. Related work is to be approved by the department and is indicated in the Suggested Curriculum Leading to a Bachelor of Arts Degree in a Foreign Language.

B. The French major leading to a B.A. degree with secondary school teaching includes the same courses as A, and in addition all courses required for certification as indicated in the Suggested Curriculum Leading to a Bachelor of Arts Degree in a Foreign Language, with Certification in Secondary School Teaching. This program is worked out in collaboration with both the Department of Foreign Languages and the College of Human Development and Learning.

A or B is required for recommendation either to teaching or to graduate school.

C. The French major leading to a Bachelor's Degree in French for the non-professional consists of FRE 201, 202, 301, 302, 303, 304, 309, 331 and six hours of French at the 400 level. Candidates for a degree with certification in elementary school teaching may take option C.

*The number of hours credit for each course (3-4) is determined by the necessity or availability of a lab program

FRENCH

FRE 101. ELEMENTARY FRENCH. (4) Fundamentals of French grammar and phonetics, reading, writing and conversation. Three class hours and two hours of laboratory work per week.

FRE 102. ELEMENTARY FRENCH. (4) Prerequisite: FRE 101 or permission of the department. Continuation of FRE 101. Three class hours and two hours of laboratory work per week.

FRE 201. INTERMEDIATE FRENCH. (4) Prerequisite: FRE 102 or permission of the department. Review grammar, with composition and conversation based upon readings on French culture and civilization. Three class hours and two hours of laboratory work per week.

FRE 202. INTERMEDIATE FRENCH. (4) Prerequisite: FRE 201 or permission of the department. Review grammar, composition and conversation, based upon readings in French prose and poetry. Three class hours and two hours of laboratory work per week.

FRE 209. FRENCH CIVILIZATION. (3) Conducted in English. No knowledge of French required. Open to majors or non-majors for elective credit. A study of the French people, past and present, with emphasis on cross-cultural contrasts in attitudes and values.

FRE 301. ADVANCED FRENCH GRAMMAR, COMPOSITION AND CONVERSATION I. (3) Prerequisite: FRE 202 or permission of the department. For prospective teachers of French and students who want intensive oral and written work in the language. Oral reports and conversation on topics prepared from such sources as journals and newspaper articles.

FRE 302. ADVANCED FRENCH GRAMMAR, COMPOSITION AND CONVERSATION II. (3) Prerequisite: FRE 202 or permission of the department. Informal conversation on diversified prepared topics, newspaper and magazine articles. Students will be given maximum opportunity for self-expression. Book reports on collateral readings.

FRE 303. INTRODUCTION TO THE STUDY OF FRENCH LITERATURE. (3) Prerequisites: FRE 202 or permission of the department. Study of major works of French literature with emphasis on in-depth analyses of individual authors, works and related movements. Readings, discussions, presentations and *explications de texte.*

FRE 304. THE DYNAMICS OF FRENCH LITERATURE. (3) Prerequisite: FRE 301 or FRE 202 and permission of the department. A study of the sources and the evolution of literary forms, themes and symbols and the interrelationships of literature, history and society as perceived in French literature. Lectures, oral reports and discussions.

FRE 309. FRENCH CIVILIZATION. (3) Prerequisite: FRE 202 or permission of the department. A study of the French people, past and present. Special attention to cross-cultural contrasts in attitudes and values. Conducted in French.

FRE 331. FRENCH PHONETICS. (3) Prerequisite: FRE 202 or permission of the department. Study of the sounds of the French language, their production and their representation by means of the International Phonetic Alphabet. Practice in reading and speaking with proper rhythm and intonation. (May be repeated for credit with permission of the department.)

FRE 350. SELECTED TOPICS IN FRENCH. (3) Prerequisite: junior standing and consent of the department. Credit may be repeated.

FRE 360. FRENCH LITERATURE IN TRANSLATION. (3) Prerequisite: none. Study of selected works of major French writers translated into English. Available to French majors for elective credit only. May be repeated for credit with different content. Course conducted in English.

FRE 401. FRENCH LITERATURE OF THE TWENTIETH CENTURY. (3) Prerequisites: FRE 303 and 304 or permission of the department. Concentration on the principal authors and movements of the contemporary period.

FRE 403. FRENCH LITERATURE OF THE NINETEENTH CENTURY. (3) Prerequisites: FRE 303 and 304 or permission of the department. Concentration on the sources of nineteenth century literary ideas, the principal literary movements and the principal poets, dramatists, novelists and critics.

FRE 405. THE AGE OF ENLIGHTENMENT. (3) Prerequisite: FRE 303 or permission of the department. Major emphasis on "les philosophes," especially Montesquieu, Voltaire, Diderot and Rousseau.

FRE 408. THE SEVENTEENTH CENTURY. (3) Prerequisite: FRE 303 or permission of the department. Study of Pre-Classical and Classical trends in seventeenth century French literature. Emphasis on the work of major writers of the period: Descartes, Pascal, Corneille, Moliere, Racine, La Fontaine, Boileau and Mme de Lafayette. Outside readings and reports.

FRE 411. FRENCH-AFRICAN LITERATURE. (3) Prerequisite: FRE 302 or permission of the department. Study of French-African literature from the colonial period through the contemporary period. Course conducted in French.

FRE 417. FRENCH LITERATURE OF THE MIDDLE AGES. (3) Prerequisite: FRE 303 or permission of the instructor. Study of French literature from the *Chanson de Roland* to Francois Villon. Knowledge of the Old French Language is not a prerequisite but

may be acquired by special arrangement with the department. Outside readings and reports.

FRE 418. FRENCH LITERATURE OF THE RENAISSANCE. (3) Prerequisite: FRE 303 or permission of the instructor. Study of French literature from 1480 to 1610. The influence of Humanism, Italianism and the Religious Wars on French literature. Emphasis on Rabelais, Ronsard and Montaigne. Outside readings and reports.

FRE 450. SPECIAL TOPICS IN FRENCH. (3) Prerequisite: two 300 courses or permission of the instructor. Treatment in depth of a special subject group of figure in French literature or French culture. May be repeated for credit with change of topic.

FRE 491. SENIOR COLLOQUIUM. (3) Prerequisite: senior standing and permission of the department. Special problems in the major field. Collateral readings and term papers. FRE 491 is required of all French majors.

GERMAN

A major in German consists of German 201, 202, 301 or 302, 309, 311, 403 or 404, 410, 420 and 491 plus three additional hours on the 300 or 400-level, or a total of 32 hours. In addition, 15 hours of related work, to be approved by the department chairman, will be required. Candidates for teacher certification must also take GER 331, making a total of 35 hours of work in the Foreign Languages Department required.

COURSE DESCRIPTIONS

GERMAN

GER 101. ELEMENTARY GERMAN. (4) Fundamentals of German grammar and phonetics, reading and conversation. Three class hours and two hours of laboratory work per week.

GER 102. ELEMENTARY GERMAN. (4) Prerequisite: GER 101 or permission of the department. Continuation of GER 101. Three class hours and two hours of laboratory work per week.

GER 201. INTERMEDIATE GERMAN. (4) Prerequisite: GER 102 or permission of the department. Review grammar, composition and conversation, based upon readings on the culture and civilization of German-speaking countries. Three class hours and two hours of laboratory work per week.

GER 202. INTERMEDIATE GERMAN. (4) Prerequisite: GER 201 or permission of the department. Continuation of GER 201. Review grammar, composition and conversation, based upon readings in German literature. Three class hours and two hours of laboratory

FRE 309. FRENCH CIVILIZATION. (3) Prerequisite: FRE 202 or permission of the department. A study of the French people, past and present. Special attention to cross-cultural contrasts in attitudes and values. Conducted in French.

FRE 331. FRENCH PHONETICS. (3) Prerequisite: FRE 202 or permission of the department. Study of the sounds of the French language, their production and their representation by means of the International Phonetic Alphabet. Practice in reading and speaking with proper rhythm and intonation. (May be repeated for credit with permission of the department.)

FRE 350. SELECTED TOPICS IN FRENCH. (3) Prerequisite: junior standing and consent of the department. Credit may be repeated.

FRE 360. FRENCH LITERATURE IN TRANSLATION. (3) Prerequisite: none. Study of selected works of major French writers translated into English. Available to French majors for elective credit only. May be repeated for credit with different content. Course conducted in English.

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FRE 411. FRENCH-AFRICAN LITERATURE. (3) Prerequisite: FRE 302 or permission of the department. Study of French-African literature from the colonial period through the contemporary period. Course conducted in French.

FRE 417. FRENCH LITERATURE OF THE MIDDLE AGES. (3) Prerequisite: FRE 303 or permission of the instructor. Study of French literature from the *Chanson de Roland* to Francois Villon. Knowledge of the Old French Language is not a prerequisite but

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FRE 491. SENIOR COLLOQUIUM. (3) Prerequisite: senior standing and permission of the department. Special problems in the major field. Collateral readings and term papers. FRE 491 is required of all French majors.

GERMAN

A major in German consists of German 201, 202, 301 or 302, 309, 311, 403 or 404, 410, 420 and 491 plus three additional hours on the 300 or 400-level, or a total of 32 hours. In addition, 15 hours of related work, to be approved by the department chairman, will be required. Candidates for teacher certification must also take GER 331, making a total of 35 hours of work in the Foreign Languages Department required.

COURSE DESCRIPTIONS

GERMAN

GER 101. ELEMENTARY GERMAN. (4) Fundamentals of German grammar and phonetics, reading and conversation. Three class hours and two hours of laboratory work per week.

GER 102. ELEMENTARY GERMAN. (4) Prerequisite: GER 101 or permission of the department. Continuation of GER 101. Three class hours and two hours of laboratory work per week.

GER 201. INTERMEDIATE GERMAN. (4) Prerequisite: GER 102 or permission of the department. Review grammar, composition and conversation, based upon readings on the culture and civilization of German-speaking countries. Three class hours and two hours of laboratory work per week.

GER 202. INTERMEDIATE GERMAN. (4) Prerequisite: GER 201 or permission of the department. Continuation of GER 201. Review grammar, composition and conversation, based upon readings in German literature. Three class hours and two hours of laboratory

work per week. Students who wish to continue with advanced offerings in German are advised to select GER 202.

NOTE: In GER 201 and 202, the student selects either the audio-visual laboratory (individual and group work with recorded and filmed materials supplementing classroom studies) or the "drama" laboratory (participation in the preparation and performance of a German drama).

GER 203. TECHNICAL GERMAN. (4) Prerequisite: GER 201. The student reads and prepares English translations of German publications in his major field of concentration. Not open to German majors.

GER 209. INTRODUCTION TO GERMAN LIFE AND THOUGHT. (3) Conducted in English. No knowledge of German required. Open to majors or non-majors for elective credit. A study of German life and thought, past and present.

GER 301. ADVANCED GERMAN GRAMMAR, COMPOSITION AND CONVERSATION. (3) Prerequisite: GER 202 or permission of the department. For prospective teachers of German and students who want intensive oral and written work in the language. Book reports on collateral readings. Three class hours per week and laboratory work as assigned by instructor.

GER 302. ADVANCED GERMAN GRAMMAR AND COMPOSITION. (3) Prerequisite: GER 202 or permission of the department. Intensive review of German grammar. Discussion of prepared topics drawn from readings. Book reports on readings. Three class hours per week and laboratory work as assigned by instructor.

GER 309. GERMAN CIVILIZATION. (3) Prerequisite: GER 202 or permission of the department. Composition and conversation based on readings in the culture, civilization, art and literature of German speaking countries.

GER 311. TOPICS IN GERMAN STUDIES. (1-3) Prerequisite: GER 202 or permission of the department. Book reports and discussions on collateral readings. Changing topic: a) Short prose fiction, b) The radio play, c) Folk music and folk literature, d) Methods in the study of literature, e) Structure of Modern Standard German, f) Twentieth Century Germany as reflected in literature, and other topics. May be repeated for major credit as topic changes.

GER 331. GERMAN PHONETICS. (3) Prerequisite: GER 202 or permission of the department. Study of the sounds of the German language, their production and their representation by means of the International Phonetic Alphabet. Practice in reading and speaking with proper rhythm and intonation. Three class hours and two hours of laboratory work per week. Transcription exercises and student recordings.

GER 360. GERMAN LITERATURE IN TRANSLATION. (3) For non-majors. Prerequisite: sophomore standing; knowledge of German not required. May be taken for elective credit by German majors. Reading and discussions of selected works of German literature of topical interest to the student. May be repeated as topic changes.

GER 403. SURVEY OF GERMAN LITERATURE. I (3) Prerequisites: two 300-level courses (not 360) or permission of the department. General introduction to German literature from the Middle Ages to the Classical Period. Book reports and class discussion on collateral readings.

GER 404. SURVEY OF GERMAN LITERATURE II. (3) Prerequisite: two 300-level courses (not 360) or permission of the department. German literature since Classicism. Book reports and discussions on collateral readings.

GER 410. PERIODS IN THE HISTORY OF GERMAN LITERATURE. (3) (a) Medieval literature (b) Classicism (c) Romanticism (d) Contemporary Literature. Prerequisite: two 300-level courses (not 360) or permission of the department. Study of the major writers and works in a given period. Readings, lectures and reports. May be repeated for major credit as topic changes.

GER 420. THE CHIEF GENRES IN GERMAN LITERATURE. (3) (a) The novel (b) The drama (c) Lyric poetry. Prerequisite: two 300-level courses (not 360) or permission of the department. An analysis of a major genre and its development within German literary history. Readings, lectures and reports. May be repeated for major credit as topic changes.

GER 491. SENIOR COLLOQUIUM. (3) Prerequisites: senior standing and permission of the department. Comprehensive review of the major field, with special attention to the individual needs of the student. Lectures, discussions and reports.

COURSE DESCRIPTIONS

RUSSIAN

RUS 101. ELEMENTARY RUSSIAN. (4) Fundamentals of Russian grammar and phonetics, reading and conversation. Three class hours and two hours of laboratory work per week.

RUS 102. ELEMENTARY RUSSIAN. (4) Prerequisite: RUS 101. Continuation of RUS 101. Graded readings. Three class hours and two laboratory periods a week.

RUS 201. INTERMEDIATE RUSSIAN. (4) Prerequisite: RUS 102 or permission of the department. Review grammar, with conversation and composition based upon readings in Russian culture and civilization. Three class hours and two hours of laboratory work per week.

RUS 202. INTERMEDIATE RUSSIAN. (4) Prerequisite: RUS 201 or permission of the department. Continuation of grammar, conversation and composition skills, based on readings in Russian literature. Three class hours and two hours of laboratory work per week.

RUS 495. SEMINAR IN SLAVIC LINGUISTICS. (2) Study of morphology semantics, phonology and general grammar of Russian and other Slavic languages—Bulgarian, Czech, Polish, Serbo-Croatian, Slovak and Ukranian. Class meeting once a week for two hours. Prerequisite: RUS 102 or the permission of the department.

SPANISH

A major in Spanish leading to the B.A. degree consists of Spanish 201, 202, 301, 302, 303, 304, 309 or 310, and 12 hours of Spanish courses on the 400 level, including Spanish 491. Spanish 311 or 312 may be substituted for 304.

COURSE DESCRIPTIONS

SPANISH

SPA 101. ELEMENTARY SPANISH. (4) Introduction to Spanish with emphasis on auditory comprehension, oral production and control of structure. Three hours of class and two hours of laboratory per week.

SPA 102. ELEMENTARY SPANISH. (4) Continuation of SPA 101, with greater attention to reading and writing. Three hours of class and two hours laboratory per week.

SPA 201. INTERMEDIATE SPANISH. (4) Prerequisite: SPA 102 or permission of department. Reinforcement and expansion of skill mastery developed in elementary courses on basis of grammar review and conversation. Three hours of class and two hours laboratory per week.

SPA 202. INTERMEDIATE SPANISH. (4) Prerequisite: SPA 201 or permission of department. Extensive practice in oral and written control of the language on basis of readings from Spanish or Spanish-American literature. Three hours of class and two hours of laboratory per week.

SPA 209. LITERATURE OF THE HISPANIC WORLD IN TRANSLATION. (3) Prerequisite: none. Studies of Spanish or Spanish American literature in translation. Not available to Spanish majors for credit toward major but may be taken for elective credit. May be repeated for credit. Course conducted in English.

SPA 301. ADVANCED GRAMMAR AND COMPOSITION. (3) Prerequisite: SPA 202 or permission of the department. For prospective teachers of Spanish and students who want intensive oral and written work in the language. Both written and oral

composition. Reports on collateral reading. Two hours of class and two hours laboratory per week. Course conducted in Spanish.

SPA 302. ADVANCED CONVERSATION AND COMPOSITION. (3) Prerequisite: SPA 202 or permission of the department. For prospective teachers of Spanish and students who want intensive oral and written work in the language. Both written and oral composition. Reports on collateral reading. Three hours of class and two hours laboratory per week. Course conducted in Spanish.

SPA 303. INTRODUCTION TO SPANISH LITERATURE I. (3) Prerequisite: SPA 202 or permission of department. Reading and analysis of representative master works of Spanish literature from its origins through the Golden Age. Course conducted in Spanish.

SPA 304. INTRODUCTION TO SPANISH LITERATURE II. (3) Prerequisite: SPA 202 or permission of department. Continuation of SPA 303 with emphasis on literature of the nineteenth and twentieth centuries. Course conducted in Spanish.

SPA 309. SPANISH CIVILIZATION AND CULTURE. (3) Prerequisite: SPA 202 or permission of department. An overview of the cultural heritage of peninsular Spain. Lecture, discussion, recitation on basis of assigned readings. Course conducted in Spanish.

SPA 310. SPANISH AMERICAN CIVILIZATION AND CULTURE. (3) Prerequisite: SPA 202 or permission of department. An introduction to the cultural heritage of the Spanish American countries. Lecture, discussion, recitation on the basis of assigned readings. Course conducted in Spanish.

SPA 311. SPANISH AMERICAN LITERATURE I. (3) Prerequisite: SPA 202 or permission of the department. Survey of Spanish American literature from the Colonial period through Romanticism. Lectures, discussion and reports on the basis of assigned readings. Course conducted in Spanish.

SPA 312. SPANISH AMERICAN LITERATURE II. (3) Prerequisite: SPA 202 or permission of the department. Survey of Spanish American literature from Modernism through the contemporary period. Lectures, discussions and reports on the basis of assigned readings. Course conducted in Spanish.

SPA 331. SPANISH PHONETICS. (3) Prerequisite: SPA 202 or permission of department. Detailed analysis of description and production of Spanish sounds. Practical exercises to include phonetic transcription and recordings. Two hours of class and two hours of laboratory a week.

SPA 350. SELECTED TOPICS IN SPANISH. (3) Prerequisite: junior standing or consent of the department. Credit may be repeated.

SPA 401. NINETEENTH CENTURY SPANISH LITERATURE. (3) Prerequisite: two 300-level courses or permission of department. ment. Survey of peninsular literature from Costumbrismo through the Generation of 1898. Lectures, discussions and reports on basis of extensive collateral reading. Course conducted in Spanish.

SPA 402. TWENTIETH-CENTURY SPANISH LITERATURE. (3) Prerequisite: two 200-level courses or permission of department. Treatment of major literary developments from the Generation of 1898 to the present day. Lectures, discussions and reports on the basis of extensive collateral readings. Course conducted in Spanish.

SPA 405. THE GOLDEN AGE OF SPANISH LITERATURE I. (3) Prerequisite: two 300-level courses or permission of department. El Lazarillo through El Criticon. Lecture, discussion and reports on basis of extensive collateral reading. Course conducted in Spanish.

SPA 406. THE GOLDEN AGE OF SPANISH LITERATURE II. (3) Prerequisite: two 300-level courses or permission of department. Study of works of the leading dramatists of the period. Lectures, discussions and reports on basis of extensive collateral readings. Course conducted in Spanish.

SPA 411. STUDIES IN SPANISH AMERICAN PROSE FICTION. (3) Prerequisite: two 300-level courses or permission of the department. Studies of nineteenth and twentieth century Spanish American prose fiction. Course conducted in Spanish.

SPA 412. STUDIES IN SPANISH AMERICAN POETRY AND DRAMA. (3) Prerequisite: two 300-level courses or permission of the department. Studies of nineteenth and twentieth century Spanish American drama and/or poetry. Course conducted in Spanish.

SPA 413. DON QUIJOTE. (3) Prerequisite: two 300-level Spanish courses or permission of the department. In-depth study of Cervantes' masterpiece, which is considered by many critics to be the basis of the modern Western novel. Course conducted in Spanish.

SPA 450. SELECTED READINGS IN SPANISH. (3) Prerequisite: two 300-level courses or permission of the department. Consideration in depth of a predetermined author or literary movement. Course conducted in Spanish.

SPA 491. SENIOR COLLOQUIUM. (3) Prerequisite: senior standing and permission of the department. Comprehensive review of the major field.

DEPARTMENT OF HISTORY

Acting Chairman: Professor Wrigley
Professors: Abernathy, Hall (Emeritus), Morrill, Perzel, Rieke
Associate Professors: *Davis, Josephson, Patterson, Ploger (Emeritus)
Assistant Professors: Dunkley, Escott, Johnson, Kelley
Lecturers: Horner, Mullins, Shellman
Lectures (part-time): Blackwelder, Farlowe, Reichard

A major in history leading to the B.A. degree, except for students in a teacher certification program, consists of 30 hours of history. Without the special permission of the chairman of the department, no more than 12 of these hours may be at the 100 level and carry credit for the major. Three semester hours must be taken at the 400 level. Related work consists of 15 hours of approved work in a discipline other than history, including the option of 15 hours of related work in a multi-disciplinary area, such as International Studies, Black Studies, Women's Studies, and American Studies.

A major in history leading to the B.A. degree and secondary teacher certification consists of 27 hours of history. Without the special permission of the chairman of the department, no more than 12 of these hours may be at the 100 level and carry credit for the major. Three semester hours must be at the 400 level (HIS 490 and HIS 492 are recommended.) Related work consists of either 15 hours of approved work in one discipline or 21 hours evenly distributed among three of the social sciences (anthropology, economics, geography, political science, and sociology), which will qualify the student for certification in social studies. In addition the candidate for secondary certification must complete the course of study listed in the Human Development and Learning section of this catalog.

A major in history leading to the B.A. degree and an intermediate teaching certificate consists of 24 hours in history and approved related work consistent with the state guidelines for intermediate certification. In addition the candidate must complete the course of study listed in the Human Development and Learning section of this catalog.

A major in history leading to the B.A. degree and a K-3 teaching certificate consists of 24 hours in history and the course of study listed in the Human Development and Learning section of this catalog.

Curricula for teacher certification candidates must also be approved by the College of Human Development and Learning.

*On leave Academic Year 1976-1977

The Honors Program in History

The History Department offers an honors program as well as individual honors courses. Both history majors and non-majors are welcome to participate. A brochure fully outlining the honors program is available in the history office. Study abroad in Asia, Africa, Europe, Latin America or Canada can be arranged.

COURSE DESCRIPTIONS

HISTORY

Courses primarily for lower division students:

HIS 101. EARLY MODERN EUROPE. (3) A survey of European history and civilization from the Renaissance to 1815.

HIS 102. MODERN EUROPE. (3) A survey of European history and civilization from 1815 to the present.

HIS 103. AMERICAN HISTORY I. (3) Survey of American history from the earliest times to 1865.

HIS 104. AMERICAN HISTORY II. (3) Survey of American history from 1865 to the present.

HIS 105. ANCIENT HISTORY. (3) From the earliest civilization until the fourth century A.D.

HIS 106. MEDIEVAL HISTORY. (3) Political and cultural developments from the late Roman Empire until the Renaissance.

HIS 107. EARLY ASIAN CIVILIZATION. (3) A survey of the major contributions of the Asian world until the modern period.

HIS 108. MODERN ASIAN CIVILIZATION. (3) A continuation of History 107 with a special focus on the rise of Asian nationalism and the emergence of Asia into the modern world.

HIS 109. LATIN AMERICA, COLONIAL. (3) A survey of the cultural, political and economic developments of Latin America during the colonial period.

HIS 110. LATIN AMERICA, MODERN. (3) A survey of the cultural, political and economic developments of Latin America during the national period. A special focus will be placed on the rise of nationalism and revolutionary movements.

HIS 111. AFRICAN HISTORY I. (3) Sub-Saharan Africa from earliest times to the nineteenth century.

HIS 112. AFRICAN HISTORY II. (3) Sub-Saharan Africa in the nineteenth and twentieth centuries.

HIS 113. HISTORY-FILM. (3) Treatment of an historical topic, problem or theme. Students may receive credit toward graduation for more than one course under this rubric. History majors may receive credit toward the fulfillment of the hours for a major from only one course under rubric.

HIS 113A: Kenneth Clark's *Civilisation*. An interdisciplinary humanistic introduction to European cultural history. The progress of European civilization as demonstrated by its art, architecture, music and literature. The 13-film *Civilisation* series supplemented by lectures from 14 humanists. Assigned readings, essays and journals required.

HIS 113B. *Ascent of Man*. A multi-disciplinary introduction to the history of social and physical science based upon the *Ascent of Man* by Jacob Bronowski. Films supplemented by lecturers from 13 scientific disciplines. Assigned readings and reports required.

HIS 250. TOPICS AND HONORS IN HISTORY. (3) Prerequisite: consent of instructor in case of honors. Treatment of an historical topic. May be repeated for credit.

Courses primarily for upper division students:

HIS 301. THE EARLY MIDDLE AGES (312 A.D.-1066 A.D.). (3) Western Europe from Constantine to the Norman Conquest. A study of Christianity, the "Fall of Rome," the Germanic kingdoms, Islam, and the Carolingian and Ottonian empires.

HIS 302. THE HIGH AND LATER MIDDLE AGES (1056 A.D.-1349 A.D.) (3) Western Europe from the struggle between the empire and the papacy to the Black Death. A study of the crusades, origin of towns, parliaments, the middle class, universities, the secularization and centralization of governments.

HIS 303. HISTORY OF GREECE. (3) From the beginning of civilization in Greece to 323 B.C.

HIS 304. HISTORY OF ROME. (3) From the beginning of civilization in Italy to 284 A.D.

HIS 305. EUROPE IN THE AGE OF THE RENAISSANCE AND REFORMATION. (3) The breakdown of the Medieval political, religious, and cultural synthesis, and the recognition of man and the individual as the principal concerns of human experience.

HIS 306. THE EUROPEAN WORLD IN THE ERA OF THE FRENCH REVOLUTION. (3) The role of the Enlightenment, the French Revolution and Napoleon in the destruction of the Old Regime and the creation of modern political and social traditions.

HIS 309. NINETEENTH CENTURY EUROPE, 1814-1914. (3) A survey of the major political developments in European history from the Congress of Vienna. Emphasis will be placed on liberalism, na-

tionalism, imperialism and the diplomatic agreements leading to World War I.

HIS 310. TWENTIETH CENTURY EUROPE, 1914 TO THE PRESENT. (3) A review of the causes and results of World War I, followed by an intensive study of the problems of peace, rise of new governments, collapse of collective security, World War II and the postwar period.

HIS 311. RUSSIAN HISTORY FROM EARLIEST TIMES TO 1801. (3) A survey of the development of the Russian people, focusing upon the rise and fall of the Kievan state, the impact of the period of Tartar domination, the rise of Muscovy, and the growth of Tsarist autocracy before the reign of Alexander I.

HIS 312. RUSSIAN HISTORY FROM 1801 to 1917. (3) A survey of the decline and fall of the Tsarist empire, focusing upon the efforts of the last four rulers to perpetuate the monarchy and upon the factors working against the effort.

HIS 313. RUSSIAN HISTORY FROM 1801 TO THE PRESENT. (3) A survey of the development of Soviet Russia, focusing upon the October, 1917 Revolution, Lenin's years of rule, Stalin's rise to power, the Five Year Plan and the years since World War II.

HIS 314. HISTORY OF SOCIALISM AND COMMUNISM. (3) A broad treatment of the intellectual roots, major personalities and overall development of socialism before the establishment of the First International, followed by an in-depth survey and analysis of the international socialist and communist movements until the present day.

HIS 315. A MILITARY HISTORY OF WORLD WAR II. (3) An analytical and descriptive treatment of the major campaigns of World War II with emphasis upon the European theater of operations.

HIS 321. THE BYZANTINE EMPIRE (330 A.D.-1054 A.D.). (3) A study of the continuation of the Roman Empire from the establishment of Constantinople to the separation of Greek East and Latin West.

HIS 322. THE LATER BYZANTINE EMPIRE (1054-1453 A.D.). (3) A study of the struggle against Arab, Turk and Latin invaders the Slavs, the role of Byzantium in relation to the economic revolution of Western Europe and to the Italian Renaissance.

HIS 329. DISEASE AND MEDICINE IN HISTORY. (3) The development of medical knowledge, trends in the techniques and availability of medical and psychiatric care, and the impact of disease and medicine on selected problems in world history.

HIS 330. WEST AFRICA TO 1850. (3) A study of selected coastal and Sudanic societies in the pre-colonial period; their origins, development and interactions with North Africa and Europe.

HIS 331. WEST AFRICA SINCE 1850. (3) A study of the establishment of colonial regimes, social and political change in the colonial period, and the triumph of African nationalism.

HIS 332. SOUTH AFRICA. (3) A study of the major population groups of South Africa from earliest times to the present. Emphasis on the assertion and maintenance of European rule in the nineteenth and twentieth centuries.

HIS 335. THE EARLY HISTORY OF JAPAN. (3) The development of the Japanese people and state from the neolithic to the late feudal period (17th century) with emphasis on the development of social institutions and values, Japanese Buddhism, Shinto, literature, and political and economic history.

HIS 336. CHINA IN REVOLUTION. (3) A study of the last 200 years of history with main emphasis on the history of the Chinese Revolution and the post-1949 developments.

HIS 337. HISTORY OF MODERN JAPAN. (3) The history of Japan from about 1600 to the present covering Japan's intellectual, social and economic transformation from an agricultural society to an industrial power.

HIS 338. THE WEST IN ASIA: IMPERIALISM, COLONIALISM AND MODERN NATIONALISM. (3) A study of Western expansion in Asia beginning with the East India companies and the early colonial empires of the sixteenth through eighteenth centuries with concentration on modern imperialism in the nineteenth and twentieth centuries.

HIS 340. HISTORY OF ARGENTINA. (3) A survey of Argentine history from the late colonial period to the present. Emphasis will be placed on changes in Argentine economic and social structures and their relation to political developments.

HIS 341. ASPECTS OF COLONIAL LATIN AMERICA. (3) This is a topics course that will treat selected specialized areas of colonial history on a rotational basis. It may be repeated for credit when the subject matter is changed. Topics will include: Spanish society, the Indian in Latin America, the city in Latin America, and the Eighteenth Century Revolution.

HIS 342. MEXICO AND CUBA IN THE 20TH CENTURY. (3) The social and economic forces leading to the revolutionary outbreaks of 1910 and 1953 and the political contexts in which they occurred. Special emphasis will be placed on post-revolutionary developments in each country,

HIS 350. TOPICS AND HONORS IN HISTORY. (3) Treatment of an historical topic. May be repeated for credit.

HIS 361. BRITAIN TO 1485. (3) Survey of British history with emphasis on institutional, cultural, economic, and imperial developments.

HIS 362. MODERN BRITAIN, 1485-1789. (3) Continuation of History 361 with some treatment of the British Empire.

HIS 363. MODERN BRITAIN AND THE BRITISH EMPIRE SINCE 1789. (3) Continuation of History 362 with greater emphasis on the Empire and the Commonwealth.

HIS 367. FRANCE IN THE MODERN WORLD. (3) French social, political and cultural history from Waterloo to De Gaulle.

HIS 369. GERMANY SINCE 1850. (3) Unification, the Wilhelmine Empire, the Weimar Republic, the Third Reich and the two Germanies.

HIS 370. PORTUGAL AND ITS EMPIRE, 1415 TO PRESENT. (3) A survey of the rise and fall of Portugal as a world power, with emphasis on the empire in Asia, America, and Africa.

HIS 371. COLONIAL AMERICA. (3) Colonial history from the discoveries to 1763.

HIS 372. THE AMERICAN REVOLUTION AND EARLY NATION. (3) The achievement of independence and the formation of a national government, 1763-1800.

HIS 374. AMERICA IN CRISIS, 1824-1860. (3) A consideration of the new American nation in crisis. Attention is given to the development of nationalism under Jackson, the expansion of the new nation, the growth of sectionalism, and the events leading to secession.

HIS 375. CIVIL WAR AND RECONSTRUCTION, 1860-1877. (3) A study of the American people in war and the postwar adjustment. Emphasis is placed on the political, social and economic conditions of the North and South during the Civil War and Reconstruction period.

HIS 377. AMERICA IN THE TWENTIETH CENTURY, 1901-1932. (3) An intensive study of the political, economic, social and intellectual aspects of American democracy from 1901 to the Great Depression. Special emphasis on the impact of industrialism, American reform and the entry of the United States into the international arena.

HIS 378. AMERICA IN THE TWENTIETH CENTURY, 1932-PRESENT. (3) An intensive study of the political, economic, social and intellectual aspects of American democracy from the New Deal to the Great Society. Special emphasis on the New Deal and post-New Deal reform as well as America's role in world affairs.

HIS 379. HISTORY OF THE SOUTH TO 1865. (3) A survey of the South from colonial origins through the Civil War. Emphasis is placed on the political and cultural developments which ultimately led the South to secession and the creation of a distinct Southern nation in the confederacy.

HIS 380. HISTORY OF THE SOUTH SINCE 1865. (3) A survey of Southern history from Reconstruction to the present. Emphasis is placed on the political and cultural developments of the South and its attempt to maintain its biracial system. Attention is given to the development of the New South, the emergence of the Southern demagogue, the origins of segregation, and the region's attempt to deal with integration since 1954.

HIS 383. URBAN HISTORY. (3) A one-semester introduction to recent concepts and research in U.S. urban history. The city as a physical place, as a socio-political environment, and as a cultural center. Emphasis is placed on the social developments caused by urbanization.

HIS 384. CRIME AND THE POLICE. (3) An emphasis upon the historical development of criminal behavior, criminal law, the criminal courts, the police and the penitentiary system. English origins are related to nineteenth and early twentieth century U.S. systems.

HIS 386. AMERICAN FOREIGN RELATIONS, 1901-PRESENT. (3) A study of American diplomatic history from the administration of Theodore Roosevelt to the present. Special emphasis will be placed upon the interaction between domestic, economic, political and social changes and the formulation of American foreign policy.

HIS 391. HISTORY OF NORTH CAROLINA. (3) Emphasis on the colonial developments and on the constitutional, educational and transportation developments of the ante-bellum period.

HIS 393. THE FRONTIER IN AMERICAN HISTORY. (3) A study of the influence of the moving frontier line on the historical development of the United States. Emphasis will be placed on the trans-Mississippi Western United States. For comparative purposes some consideration will be given to other world frontiers.

Courses for advanced undergraduates:

HIS 411. PROBLEMS IN HISTORY. (3) A colloquium designed around a problem in history, utilizing reading, discussion, reports and short papers. Topics vary within the fields of American, European, Latin American, African and Asian history. May be repeated for credit.

HIS 414. EARLY U.S. INTELLECTUAL HISTORY. (3) Development of American social institutions and thought from the beginning to the Civil War. The course is conducted as a colloquium, combining lectures, discussions, extensive reading and oral reports, and a research paper by each student.

HIIS 415. MODERN U.S. INTELLECTUAL HISTORY. (3) Continuation of HIS 414 from the Civil War to the present.

HIS 416. RECENT AMERICAN RADICALISM. (3) Radical thought and action in the United States since 1890. Emphasis on

Marxian-Socialism, Black and labor radicalism, radical women and the new Left movement.

HIS 450. SENIOR HONORS THESIS. (3) Prerequisite: consent o the instructor. The preparation and presentation of an acceptable honors thesis or its equivalent.

HIS 490. THE NATURE OF HISTORICAL STUDY. (3) A course which examines the historian, his history, presuppositions methods and objectives.

HIS 492. SEMINAR IN HISTORY. (3) Prerequisite: consent of the department. An intensive examination of a subject in history. May be repeated for credit

HUMANITIES

HUM 301. THE MEANING OF DEATH. (3) An investigation into the experience of death in the western tradition. Study of selected philosophical, religious, existential, psychological and literary readings with a view of clarifying the conceptual problems involved in our ways of speaking about death. Explorations into the understanding of death as a horizon for understanding life.

HUM 350. TOPICS IN HUMANITIES. (3) (May be repeated for credit with consent of the student's major department.) Prerequisite: junior standing and consent of the sponsoring departments. Topics chosen from the general area of the humanities in order to demonstrate relationships and interdisciplinary influences

HUM 450. NON-RESIDENTIAL STUDIES. (1 to 15 hours). Experience outside the University arranged cooperatively by the student and his major department in the College of Humanities for the purpose of applying, extending, adding to, or elaborating the student's studies in his major. (All arrangements must be approved prior to the student's embarking on the study. Such arrangement will include a written proposal of the goals, methods, duration hours-credit, and evaluation of the project.) To be developed approved, supervised and evaluated by the student's major department (with the cooperation of others as appropriate). Grading may be on a pass/fail basis. Ordinarily to be taken no earlier than the junior year. No more than 15 hours of Non-Residential studies may be presented by a student.

DEPARTMENT OF PHILOSOPHY

Chairman: Professor Shumaker
Professor: Fishman
Associate Professor: Lincourt
Assistant Professors: Cook, Presler,
Instructor: Toenjes

A major in philosophy consists of a minimum of 28 semester hours in philosophy and includes courses 201, 205, 311, 313 and two senior seminars. Additional work is to be chosen from other philosophy offerings.

Required related work consists of 15 hours, such work to be chosen in consultation with the department representative or adviser. Students contemplating graduate study in philosophy are encouraged to undertake related work in the natural or physical sciences and to develop reading proficiency in German and French.

COURSE DESCRIPTIONS

PHILOSOPHY

PHI 201. INTRODUCTION TO PHILOSOPHY. (3) An introduction to some of the basic concepts and problems of philosophy. Typical problems are freedom and determinism, mind-body interaction, the status of moral judgments and the problem of perception. Readings from the works of representative philosophers both classical and contemporary.

PHI 205. DEDUCTIVE LOGIC. (3) A first course in the general principles of deductive logic, both classical and symbolic, with emphasis on the use of formal logic in analysis of ordinary language discourse.

PHI 311. ANCIENT PHILOSOPHY. (3) Prerequisite: PHI 201 or junior standing. An inquiry into the history of Western intellectual and philosophic thought from the early Greeks to the post-Aristotelian period. Readings from the pre-Socratics, Plato, Aristotle, Epicureans, Stoics, Skeptics and Neoplatonists.

PHI 312. MEDIEVAL PHILOSOPHY. (3) Prerequisite: PHI 201. An investigation of the Western philosophical tradition from Augustine to William of Ockham. Readings and discussions will cover such other authors as Anselm of Canterbury, Bonaventure, Thomas Aquinas, and Duns Scotus.

PHI 313. MODERN PHILOSOPHY FROM DESCARTES TO KANT. (3) Prerequisite: PHI 201 or junior standing. An inquiry into the development of modern philosophic and scientific thought. Readings selected from respective works in the seventeenth to the nineteenth centuries.

PHI 314. CONTEMPORARY PHILOSOPHY. (3) Prerequisite: PHI 201. A study of the main movements and problems of contemporary philosophy: pragmatism, logical positivism, linguistic analysis, existentialism.

PHI 317. AMERICAN PHILOSOPHY. (3) Prerequisite: PHI 201 or junior standing or consent of the instructor. A survey of European philosophic movements which had counterparts in American thought, leading to distinctively American Pragmatism, Realism and Humanism. Readings from contemporary American philosophers.

PHI 321. ETHICS. (3) A study of the development of ethical thought in ancient and modern times, with special references to present day ethical problems. Readings selected from classical and contemporary sources.

PHI 323. EXISTENTIALISM. (3) Prerequisite: PHI 201 or consent of instructor. A study of themes and concepts central to the existentialist tradition in philosophy and literature. Investigations will focus on such issues as: Authenticity, Absurdity, Death, Anguish, Guilt, Forlornness, Freedom, and the Limits of Reason.

PHI 325. AESTHETICS. (3) Prerequisite: PHI 201 or junior standing. A study of the major theories of art, including readings from Aristotle, Kant, Nietzsche, Santayana, Collingwood, Croce and Dewey. Emphasis is on the following categories: expression, criticism, the work of art, the creative process.

PHI 335. ADVANCED LOGIC. (3) Prerequisite: PHI 205. A study of advanced systems of logic, with emphasis upon symbolic logic. The main stress will be placed upon formal systemic characteristics such as axiomatics and proof techniques.

PHI 347. PHILOSOPHY OF SCIENCE. (3) Prerequisite: PHI 201 or 205 or consent of instructor. A philosophical investigation, *via* critical study and group discussion, of epistemological, methodological, metaphysical, interdisciplinary, and metadisciplinary issues arising out of science. "Science" is here construed very broadly so as to imply a strong connection with all systematic inquiry, either past or present, into natural or social questions.

PHI 350. TOPICS. (3) May be repeated for additional credit with the approval of the department. Prerequisite: consent of the department. Topics chosen from specific areas in philosophy such as symbolic logic, philosophy of science, freedom and determinism, philosophy in literature, detailed study of significant philosophical movements or detailed study of the works of individual philosophers.

PHI 360. MAJOR FIGURE IN PHILOSOPHY. (3) Prerequisite: consent of instructor. An indepth investigation into the thought and writings of a major figure in philosophy. Special emphasis will be on primary resources. Included will be 360A - Plato, 360B - Aris

totle, 360C - Descartes, 360D - Kant, and others as necessitated by departmental needs and interests.

PHI 365. THEORY OF KNOWLEDGE. (3) Prerequisite: PHI 201. An analysis of the concepts of meaning, belief, knowledge, truth and discussion of the analytic-synthetic distinction. Readings from historical and contemporary sources.

PHI 375. METAPHYSICS. (3) Prerequisite: PHI 201. An investigation of the history of metaphysics, focusing on the concept of experience. Authors to be discussed include Aristotle, Hume, Lewis, Hegel, James Peirce, Dewey and Whitehead.

PHI 401. PHILOSOPHY OF RELIGION. (3) Prerequisites: PHI 201 and junior standing. A discussion of the philosophical implications of religious experience. The definitions, development and diverse forms of the problems of belief and reason in modern thought.

PHI 402. PHILOSOPHY OF THE EAST. (3) Prerequisite: six hours of philosophy. A survey of thought in the East from ancient to modern times. Special emphasis on the philosophical concepts of Hinduism, Buddhism, Confucianism and Taoism.

PHI 445. PHILOSOPHY OF MIND. (3) Prerequisite: PHI 201. A study of the conceptual issues in the mind body problem and the problem of other minds. Analysis of concepts of intention, motivation, consciousness, imagination and emotion.

PHI 491. SEMINAR. (2) Prerequisite: consent of the department. Individual or group inquiry into selected philosophic problems. Exposition and discussion of the results.

PHI 492. SEMINAR. (2) Prerequisite: consent of the department. A continuation of PHI 491.

DEPARTMENT OF RELIGIOUS STUDIES

Chairman: Professor Underwood
Professor: Witherspoon
Associate Professor: St. Clair
Assistant Professors: Gestwicki, Meyer, Thomas
Instructor: White

A student may satisfy the requirements for a major in religious studies after completing nine hours in the area of Introductory Religious Studies (normally including Religion 203 and 204) in one of the two following programs:

(A) *Course program in religious studies:* A student who elects this option will satisfy the requirements for a major in religious studies by completing a minimum of 18 hours of upper-level religious studies courses with at least one course from each of the areas of Eastern Re-

ligious Thought, Judeo-Christian Thought, and Religion and Culture.

(B) *Interdisciplinary program in religious studies:* This option is intended to provide a course of studies which will make maximum use of the interdisciplinary aspects inherent in religious studies. Before the beginning of the junior year, a student may submit a proposal for a program of study for his junior and senior years. If the proposal is approved by the department, the student will satisfy the requirement for a major in religious studies by completing his approved program rather than by taking any specified number of religious studies courses. This is not an honors program, and any student may submit a proposal to the department. A detailed description of this program may be obtained at the departmental office.

COURSE DESCRIPTIONS

RELIGIOUS STUDIES

Introductory Religious Studies

Religious Studies 201, 202, 203 and 204 are separate courses and may be taken in any order without prerequisite.

REL 201. HEBREW RELIGIOUS THOUGHT. (3) An introduction to the Hebrew religious tradition from the perspective of its development in the culture of the ancient Near East and from the perspective of its subsequent impact on Western culture. Analysis of selected Hebrew Scriptures and other writings from the Jewish tradition in English translation.

REL 202. ORIGINS OF CHRISTIANITY. (3) A study of the emergence of Christianity in its cultural context. Analysis of selected early Christian writings in English translation.

REL 203. EASTERN RELIGIONS. (3) An introduction to selected religions of the East such as Islam, Hinduism, Buddhism, Chinese and Japanese religions. Special emphasis on their world views as expressed in the functional use of myth and symbol in the traditions.

REL 204. RELIGION AND CONTEMPORARY CULTURE. (3) An introduction to the critical study of the religious dimension of human existence. Attention given to the function of myth, symbol and artistic imagination in the development of religious sensibilities and to the impact of modern scientific and cultural forms on contemporary religious thought and action.

Eastern Religions

REL 311. HINDUISM. (3) Prerequisite: REL 203 or consent of the instructor. A study of the ancient Vedic traditions and the development of Hinduism. Emphasis placed on the role of Hinduism in the development of Indian civilization.

REL 312. BUDDHISM. (3) Prerequisite: REL 203 or consent of the instructor. The historical development of Buddhism with special attention given to its diverse manifestations in South Asia.

REL 313. TAOISM. (3) A study of Chinese religious traditions, concentrating on Taoism in its philosophical formulations (Lao Tzu, Chuang Tzu) as well as its development in meditation, yoga, alchemy and ritual orthodoxy.

REL 314. ISLAM. (3) Prerequisite: REL 203 or consent of the instructor. A study of the development of the traditions in Islam with special emphasis on Islamic culture, literature and mysticism.

REL 315. VISUAL MYSTERIES OF INDIA. (3) Prerequisites: REL 203 or consent of instructor. A study of the visual expressions of Hindus, Buddhists, Jainas and Muslims in the caves, temples, paintings and sculptures of India. Discussions include a historical study of various types of art, the moods these visual images express and create in the worshipper, the nature of illusion in Indian religious imagery and the ideas of Indian aesthetics.

REL 316. ZEN BUDDHISM. (3) A study of Buddhist origins in India, development of the Ch'an (Zen) School in China and Japan, with special emphasis on the formative influences of Zen on Japanese art and culture.

REL 411. TIBETAN RELIGION. (3) Prerequisite: REL 203 or consent of instructor. A study of the symbols, beliefs and practices of the Tibetan tradition, which grew out of the fusion of the ancient native religion and Buddhism.

REL 419. SEMINAR: EASTERN RELIGIONS. (3) Prerequisite: consent of instructor. An intensive investigation of a special topic in the area of Eastern religions.

Judeo-Christian Thought

REL 321. HEBREW PROPHETIC RELIGION. (3) Prerequisite: REL 201 or consent of the instructor. The historical development of the prophetic movement from its origins to its culmination in the classical prophets of the eighth to the sixth centuries B.C. Emphasis placed on the contributions of the prophets to their own day and their significance for contemporary religious thought.

REL 322. THE PSALMS AND WISDOM LITERATURE OF ISRAEL. (3) Prerequisite: REL 201 or consent of the instructor. A study of the origin and content of the Psalms and a study of the place of wisdom literature in the development of Hebrew thought.

REL 324. CHRISTIAN ORIGINS: JESUS. (3) Prerequisite: REL 202 or consent of the instructor. An intensive study of the synoptic gospels for an understanding of Jesus and the religion he taught.

REL 325. CHRISTIAN ORIGINS: PAUL. (3) Prerequisite: REL 202 or consent of the instructor. A detailed analysis of the Pauline

corpus. Particular reference is made to the occasion, purpose and significance of each letter for the emerging Christian community.

REL 327. JUDAISM. (3) Prerequisite: junior standing or consent of the instructor. A systematic survey of the development of Jewish religious thought from the Middle Ages to the present. Reading from Maimonides, Buber and others.

REL 328. MODERN CHRISTIAN THOUGHT. (3) Prerequisite: junior standing or consent of the instructor. A study of the contributions of the major creative thinkers who have interpreted the Christian tradition in the context of the modern world. Readings selected from such figures as Schleiermacher, Kierkegaard, Barth, Tillich, Rahner and Ong.

REL 429. SEMINAR: JUDEO-CHRISTIAN THOUGHT. (3) Prerequisite: consent of the instructor. An intensive investigation of a special topic in the area of Judeo-Christian thought.

Religion and Culture

REL 331. RELIGION IN AMERICAN CULTURE. (3) An inquiry into the role of religion in the shaping of American culture.

REL 332. CONTEMPORARY BLACK RELIGION IN AMERICA. (3) An examination of the tenets of Black religion since World War II, with particular emphasis on the influence of religion and religious leaders in the struggle for a Black humanity. This course will analyze the religious experience of Black Americans in the mid-20th century. Special attention will be given to 1) the origins of Black Religion and the Black Church, 2) Black Islam, 3) Black Christianity and 4) the development of a Black religious perspective.

REL 333. SCIENCE, TECHNOLOGY AND HUMAN VISION. (3) Study of the impact of science and technology on the way we see ourselves and the world. Attention given to such topics as the relationship of science and religion, the place of the individual in a technological society and the visions of the scientific future.

REL 334. RELIGION AND LITERARY IMAGINATION. (3) Prerequisite: junior standing. An investigation of some enduring problems of religious thought and action as they have been expressed, directly and indirectly, in selected works of contemporary literature.

REL 335. THE LIMITS OF LANGUAGE. (3) An examination of the adequacy of language to function as the symbolic framework for reflecting on the ultimate questions of human existence. Language studied in its boundary situations—first, at the boundaries where non-verbal, pre-reflective meaning which is rooted in the body crosses over to the verbal, reflective level of language; second, at the boundaries where language is forced beyond its ordinary uses in attempts to speak of meaning beyond language.

REL 336. VISUAL SYMBOLS OF THE HUMAN SPIRIT. (3) An examination of the role of the visual arts in the development of the human spirit. A brief study of art in traditional religions followed by an emphasis on the erosion of the traditional symbols and the attending movement of art away from traditional religious subject matter. Course concludes with an investigation of modern art in an attempt to reflect on the meaning of the visual symbols which are informing our contemporary imagination.

REL 337. RELIGIOUS ODYSSEY IN MODERN FILM. (3) Major foreign and American films made after World War II seen and discussed in terms of what they reflect about the ultimate concerns of contemporary western culture and what this implies for today's thinking in religion.

REL 338. DREAMS AND RELIGIOUS IDENTITY. (3) Begins by learning how to understand our private dreams. Analogies with the process of dreaming explored at the public or cultural level of "dreaming" as in artworks and especially at the level of religious experience and expression as in symbols and myths.

REL 339. PRIMITIVE RELIGIONS. (3) A discussion of the evidence for the religious conceptions of pre-historic man, painting, sculpture, artifacts, burial practices, etc. A study of two or three selected examples of tribal religion in the modern period, taken from paleolithic and neolithic levels of culture.

REL 342. THE RELIGIOUS PERSONALITY. (3) Based on the personal documents (diaries, journals and autobiographies) of religious individuals. Documents studied in terms of their psychological, literary and historical implications.

REL 431. PHILOSOPHY OF RELIGION. (3) Prerequisites: PHI 201 and junior standing (same as PHI 401).

REL 432. RELIGION AND MODERN THOUGHT. (3) Prerequisite: consent of the instructor. An intensive analysis of selected issues which stem from the interaction of modern thought and modern religious sensibilities.

REL 433. AMERICAN INDIAN RELIGIONS. (3) Prerequisite: consent of the instructor. A study of the myths and rituals of the American Indians with special attention to an understanding of the function of myth in defining world views and rituals as visual enactment of and involvement in those views.

REL 439. SEMINAR: RELIGION AND CULTURE. (3) Prerequisite: consent of the instructor. An intensive investigation of a special topic in the area of religion and culture.

Special Studies

REL 350. TOPICS IN RELIGION. (3) Prerequisite: consent of the instructor. May be repeated for credit. Treatment of a special topic in religious studies.

REL 450. TOPICS IN RELIGION. (3) May be repeated for credit. Prerequisite: consent of the department. Topics are to be chosen from the areas of religion specifically relating to contemporary issues in theology and religion and religious thought of non-Judeo-Christian religion.

REL 490. INDEPENDENT STUDIES. (1 to 3) Prerequisite: consent of department. May be repeated for credit. Individual investigation and appropriate exposition of the results.

REL 491. SEMINAR. (2) Prerequisite: consent of the department. Individual investigation and appropriate exposition of the results.

REL 492. SEMINAR. (2) Prerequisite: consent of the department. A continuation of REL 491).

College of Nursing

Dean: Professor Jernigan
Dean Emeritus: Brocker
Professor: Caddell
Associate Professors: Haynes, Leonard, Nicholson, Smith
Assistant Professors: Anderson, Cahill, Campbell, Chitty, Cox, Crawford, Harvey, Mauldin, Maynard, Mobley, Morgan, Norris, Sykes, Yaros
Instructors: Doyle, Gentry, Head, Lawrence, Sanders, Stitt, Whitlock

The College of Nursing derives its purpose from the purposes of the University of North Carolina at Charlotte and affirms its intention to teach nursing, to participate in the search for truth and to serve those who are concerned about the health care of the citizens of North Carolina, the nation and the world. The purpose of the College of Nursing is to prepare a family health nurse who is a generalist, capable of:

1. providing nursing care for members of families in various settings;
2. functioning as a change agent and a leader in the promotion of health; and
3. advancing through further education at the graduate level.

Philosophy

The College of Nursing sees itself as a workshop in humanity—a place within the University where persons who meet admission requirements, without consideration of race, creed, sex or belief, may come to study in an atmosphere that encourages the process of learning. The faculty believe that in this workshop both faculty and students can seize opportune moments and life experiences so that they discover together how to learn continuously and creatively and how to find one's own way to contribute to the world community as an educated person with social and colleague responsibilities.

Learning is seen as the development of competencies necessary for self-analysis, value judgments, choice evaluation and behavioral changes. The faculty believe that professional nursing education belongs in a university setting. This environment provides opportunities for intellectually curious and capable students to develop their individual potentialities and integrate learnings from the arts and sciences as they acquire nursing knowledge.

The faculty believe that nursing is a profession with responsibilities and privileges, concerned with the promotion, maintenance and restoration of optimal health as well as providing supportive care when death is imminent. We hold that nursing helps to fulfill a universal need for health care services and that the unique-

ness of nursing is found in the ways in which these services are performed. We further believe that nursing is an important social force which makes an essential contribution to the total health program of society.

The curriculum of the college is designed to prepare a Family Health Nurse who is a generalist, capable of providing nursing care for members of families in various settings. The Family Health Nurse utilizes the nursing process, which is defined by this faculty as assessing, planning, implementing and evaluating. This process is deliberative, interactive, scientifically based, and devoted to helping individuals, families and groups make maximum use of their internal and environmental resources in meeting their respective health needs. In providing care the Family Health Nurse acts in dependent, independent and collaborative roles.

The Family Health Nurse utilizes concepts and principles of health, developmental theories, hierarchy of needs, and interpersonal theories in assisting the family and/or family member in maintaining or regaining optimal health. The family is seen as a natural unit in which socialization of man occurs. A change in the health status of one family member influences the total family relationships and conversely, the family influences individual health. Health is viewed as a dynamic state in which there is a constant striving by man for homeostasis while interacting with biopsychosocial influences.

Expanding knowledge in all fields of health, an increasingly better educated public, new systems for delivery of health care and changing attitudes toward health will bring about different expectations of the professional nurse in the future. Universal opinion places the importance of man's knowledge of ecological factors in sharp focus; therefore, the Family Health Nurse must be able to facilitate understanding of how man influences his environment and his environment influences his health. The faculty believe the Family Health Nurse can be a change agent by assuming a more independent role in assessing and in meeting society's health needs.

The faculty believe that upon graduation the Family Health Nurse has acquired a sound foundation for leadership, advanced study and research and will assume responsibility for continued intellectual and personal growth.

Objectives

In a setting designed to foster inquiry and discovery, the curriculum leading to a Bachelor of Science degree with a major in nursing is planned through a continuum of learning experiences to prepare a Family Health Nurse who will:

1. utilize the nursing process with the family and its members to promote, maintain, and restore optimal health;

2. utilize appropriate nursing roles in supporting the health of the family and its members in a variety of community settings;

3. utilize knowledge of developmental theories to assist the family and its members in achieving an optimal level of health;

4. utilize knowledge of interpersonal theories to promote therapeutic and colleague relationships;

5. demonstrate movement toward self-actualization by evaluating his own behaviors and striving for personal and professional growth;

6. function as a change agent and a leader in the promotion of health of the family, the community and society;

7. contribute to nursing knowledge through critiquing, participating in, and utilizing scientific investigation;

8. be capable of advancing through further education at the graduate level.

The Bachelor of Science degree with a major in Nursing is comprised of 120 semester hours credit, 54 of which are in the nursing major. This allocation of credit for nursing courses takes into consideration the student's needs for: 1) a strong general education base (50 semester hours) to complement and support the nursing major; 2) an opportunity to pursue within the University electives (16) semester hours) which add to his portfolio of learning in terms of personal and professional interests; and 3) time to participate in campus activities and creative pursuits.

Nursing and general education courses are arranged so that there is a continual interchange of theory and practice. The curriculum of the College of Nursing proceeds in a series of planned sequential learning experiences that involve the student in the teaching-learning process and permit development of the intellectual processes of inquiry, analysis synthesis, and creativity.

Admission to the program requires, in addition to admission to the University, an interview with a member of the College of Nursing faculty. The interview is an information-giving time structured to allow for questions and answers about the program.

Requirements for Progression in the Nursing Program

In order to promote the progression of safe practitioners from one level to the next within the College of Nursing and eventually into the nursing profession, students

1. must achieve a minimum grade of *C* in *each nursing course.*

a. Course grades reflect combined theoretical and clinical performance, neither component of which must be less than *C*.

b. Only four hours of *D* credit in a natural science is acceptable for credit by the College of Nursing.

2. may not repeat a nursing course more than once. If a student repeats a nursing course and does not achieve a minimum of *C*, she will be asked to withdraw from the College of Nursing.

3. may not progress to the next level in the nursing curriculum until the prerequisite nursing courses have been completed.

4. may not attempt junior level nursing courses until Sociology 151, a Sociology or Anthropology elective, Psychology 101, Biology 101, 203, 205 and Chemistry 103 and 104 and sophomore level nursing courses have been completed and a 2.0 QPR has been earned, overall as well as a 2.0 QPR in the Nursing major.

5. may not attempt senior level nursing courses until all junior level nursing courses have been completed, including Psychology 307 and a 2.0 QPR has been earned, overall, as well as a 2.0 QPR in the Nursing major.

6. A student must achieve a 2.0 QPR in the nursing major to graduate.

7. Student may receive *I* in accordance with policy stated in UNCC *Catalog* when confronted with personal or family crises.

CURRICULAR REQUIREMENTS FOR THE BACHELOR OF SCIENCE DEGREE WITH A MAJOR IN NURSING

FRESHMAN YEAR

English 101	3	English 102	3
Math/Language	3-4	Math/Language	3-4
Biology 101	4	Nursing 102	3
Chemistry 103	4	Chemistry 104	4
		Sociology 151	3
	14-15		16-17

SOPHOMORE YEAR

Nursing 201	4	Nursing 202	4
Nursing 203	2	Nursing 204	2
Biology 203	4	Biology 205	4
Sociology or Anthropology	3	Electives	6-8
Psychology 101	3		
	16		16-18

JUNIOR YEAR

Nursing 301-A	4	Nursing 301-B	4
Nursing 302	4	Nursing 303	4
Psychology 307	3	Electives	6
Elective	3		
	14		14

SENIOR YEAR

Nursing 401	5	Nursing 402	5
Nursing 403	5	Nursing 404	4
Nursing 491	2	Nursing 492	2
Elective	3	Elective	3
	15		14

COURSE DESCRIPTIONS

NURSING

NUR 102. ECOLOGY OF MAN. (3) The focus of the course is directed toward understanding the relationship of selected environmental and social factors to man's health and the meaning of health and illness to the individual, his family and the community. Major health problems are explored along with a wide variety of facilities society provides for meeting health needs and solving health problems. Current trends in providing health care, including the individual's entry into the health care system, are also discussed.

NUR 201. FUNDAMENTALS OF NURSING I. (4) Prerequisites: NUR 102, CHE 103 and 104, BIO 101, SOC 151 or PSY 101, and sophomore standing. Corequisites: BIO 203 or 205 and SOC or ANT elective. The focus of this course is the nursing process, with emphasis on the assessment of the individual and his family to determine their physical and psychosocial needs. Basic principles and concepts essential for nursing care are introduced. Study of the well individual enhances the students' understanding of human development, behavior and aging.

NUR 202. FUNDAMENTALS OF NURSING II. (4) Prerequisites: NUR 201, 203. Corequisites: BIO 203 or 205, SOC or ANT elective. This course focuses on the planning and implementation phases of the nursing process in providing family-centered care. Students increase their knowledge and use of therapeutic techniques in assisting well and ill individuals.

NUR 203. NURSING CONCEPTS SEMINAR I. (2) Corequisite: NUR 201. An examination of selected basic concepts in contemporary nursing including: professional nursing roles; roles of the Family Health Nurse in a variety of health care settings; the concept of health; and principles of communication theory and interviewing.

Maintenance of health in the individual constitutes the prim framework within which these concepts are studied. Special e phasis is placed upon self-awareness as a basis for effective one-t one interaction.

NUR 204. NURSING CONCEPTS SEMINAR II. (2) Core quisite: NUR 202. A continuation of NUR 203 in which additional basic concepts in contemporary nursing are examined, including: health care delivery systems; application of change theory to health care systems; utilization of the research process; and character istics of the various levels of nursing education and nursing prac tice. Basic components of group theory and process are explored within the seminar setting.

NUR 301-A. NURSING OF THE ADULT FAMILY MEMBER I. (4) Prerequisites: junior standing; NUR 102, 201, 202, 203, 204 completion of sophomore pre- and corequisites. Corequisites: NUR 302 or NUR 303, PSY 307. This course emphasizes the response of the adult and his family to illness, presenting content in a problem oriented manner. The course focuses on utilization of the nursing process in restoring the adult to an optimal level of wellness, path ophysiology and medical-surgical therapy serving as a basis for planning and implementing appropriate nursing care.

NUR 301-B. NURSING OF THE ADULT FAMILY MEMBER II (4) A continuation of NUR 301-A.

NUR 302. NURSING OF THE CHILDBEARING FAMILY. (4 Prerequisites: junior standing, NUR 201, 202, 203, 204; completion o sophomore pre- and corequisites. Corequisites: NUR 301-A or 301-B PSY 307. This course is designed to enable the family health nurse student to utilize the nursing process in provision of care to the child bearing family. The focus is on growth and development of each family member along the wellness-illness continuum during this period.

NUR 303. NURSING OF THE CHILD REARING FAMILY. (4 Prerequisites: junior standing; NUR 201, 202, 203, 204; completion o sophomore pre- and corequisites. Corequisites: NUR 301-A or 301-B PSY 307. This course enables the student to understand the basi concepts of patient care with emphasis on the childbearing family from infancy through the adolescent period. The student utilizes bio psychosocial principles in applying the nursing process as h provides total nursing care for the child and his family along th wellness-illness continuum.

NUR 401. MENTAL HEALTH NURSING. (5) Prerequisites: com pletion of all required courses below the 400 level. This course is de signed to assist the student in exploring and understanding th dynamics of interpersonal relationships as adaptive and maladap tive processes in individuals, families and groups. Emphasis i placed upon the development of awareness of personal behavior an its effect on the client relationship. Building on classical and cu

rent theory in psychology, sociology and physiology, content emphasis is on assisting the student in identifying, adapting, implementing and evaluating theoretical constructs which are most appropriate to 1) the learner's potential and 2) the client's need. The student works in hospital and community settings as he applies the nursing to selected client relationships.

NUR 402. NURSING OF THE ADULT FAMILY MEMBER III. (5) Prerequisites: completion of all required courses below the 400 level. This course is designed to further the student's knowledge of and skill in providing care for adult family members who are acutely or critically ill. Emphasis is placed on the pathophysiological alterations in cardiovascular-respiratory functions and the impact which these changes have on an individual and his family. Opportunities are provided for independent decision making in applying the nursing process in such specialized areas as acute coronary care, postoperative intensive care and emergency room.

NUR 403. COMMUNITY HEALTH NURSING. (5) Prerequisites: completion of all required courses below the 400 level. This course is designed to assist the student in utilizing communication and interpersonal skills in family-centered and community settings; understanding the nursing process in promotion of high-level wellness and health maintenance for families and communities; understanding professional responsibility as a health team member in an interdisciplinary approach to family and community health; utilizing knowledge of community health theory in evaluating the health care for individuals, families and communities; and relating community health and community health nursing to current practice and trends to health care.

NUR 404. MANAGEMENT OF PATIENT CARE. (4) Prerequisites: completion of all required courses below the 400 level. The focus of this course is on the assessment of an existing health care unit in relation to industrial and professional models of practice and management, the assumption of responsibility for health care within the framework of the unit; and the determination of ways to improve care and plan for change.

NUR 490. TOPICS IN NURSING. (3) Prerequisites: consent of the college. Topics to be chosen from the specialties of nursing.

NUR 491. RESEARCH IN NURSING I. (2) Prerequisites: completion of all required courses below the 400 level. Introduction to research in nursing. The student reviews and critiques studies from nursing and related areas and develops a preliminary proposal.

NUR 492. RESEARCH IN NURSING II. (2) Prerequisite: NUR 491. This course provides opportunity for the student to study a nursing problem using the research method.

College of Science and Mathematics

Dean: Charles H. Stone Professor Burson

The College of Science and Mathematics includes the De partments of Biology, Chemistry, Mathematics and Physics.

DEPARTMENT OF BIOLOGY

Chairman: Professor Arve
Professors: Hildreth, Matthew
Associate Professors: Edwards, Hogan, Menhinick
Assistant Professors: Barden, Bashor, Brown, Butts, Johnson Mellichamp
Oliver, Ostrowski, Travis, Turgeor
Professor Emeritus: Hechenbleikne
Lecturers: Diebolt, Phillip

A major in biology leading to the B.A. degree consists of 3 semester hours of biology including Biology 211, 221, 231, 491 an one course each in three areas to be chosen from developmen ecology, genetics and physiology. A minimum of five laborator courses in biology is required. Additional requirements are 1 semester hours of chemistry with associated labs, including Chem istry 101 and 102; and six semester hours of mathematics.

Each biology major must show a proficiency through the secon semester freshman level of a foreign language either by satisfactor completion of courses 101 and 102 in the language or by achieving satisfactory score on an appropriate test. Students contemplatin attending graduate school are strongly recommended to gain proficiency in French, German or Russian.

In addition to the requirements for the B.A. degree, a studer wishing to receive the B.S. degree is required to take eight additiona hours in biology, for a total of 40 hours; Chemistry 231 and 232, wit associated labs, in place of the chemistry elective; Physics 101 an 102, and three additional hours of mathematics (MAT 122 or CS 100 is suggested).

SUGGESTED CURRICULUM FOR THE B.A. DEGREE IN BIOLOGY

FRESHMAN YEAR

Chemistry 101, 101L	4	Biology 211	
English 101	3	Chemistry 102, 102L	

Mathematics 103 3	English 102 3
Electives 6-7	Mathematics or Computer Science Elective 3
	Electives 3-4
16-17	17-18

SOPHOMORE YEAR

Biology 221 4	Biology 231 4
Chemistry elective 4	Electives 9-12
Electives 6-9	
14-17	13-16

JUNIOR YEAR

Biology electives 8	Biology electives 8
Electives 6-9	Electives 6-9
14-17	14-17

SENIOR YEAR

Biology 491 1	Electives 15
Biology elective 4	
Electives 9-12	
14-17	15

SUGGESTED CURRICULUM FOR THE B.S. DEGREE IN BIOLOGY

FRESHMAN YEAR

Chemistry 101, 101L 4	Biology 211 4
English 101 3	Chemistry 102, 102L 4
Mathematics 103 3	English 102 3
Electives 6-7	Mathematics 120 or 141 or Computer Science 3
	Electives 3-4
16-17	17-18

SOPHOMORE YEAR

Biology 221 4	Biology 231 4
Chemistry 231, 231L 4	Chemistry 232, 232L 4
Mathematics 122 or 142 or Computer Science 3	Electives 6-9
Electives 3-6	
14-17	14-17

JUNIOR YEAR

Biology elective	4	Biology elective	
Physics 101	4	Physics 102	4
Electives	6-9	Electives	3-6
	14-17		15-18

SENIOR YEAR

Biology electives	8	Biology 491	1
Electives	6-9	Biology electives	8
		Electives	6
	14-17		15

*B.A. IN BIOLOGY WITH AN OPTION IN MEDICAL TECHNOLOGY**

A student may complete the departmental requirements for the B.A. degree in Biology in three years. Upon satisfactory completion of training in medical technology at a school of medical technology which has been approved by the National Registry of Clinical Pathologists and UNCC, the student may receive a B.A. degree in Biology from UNCC.* A maximum of 30 hours will be accepted from the school of medical technology. Eight of these hours will apply toward the requirements for the major in Biology. The student must have at least a 2.0 average, overall and in the major, at the end of the junior year. The final 30 hours counted toward the degree and the last 12 hours counted toward the major prior to entering a school of medical technology must be taken at UNCC. The student may obtain information from his departmental adviser concerning these specific schools of medical technology cooperating with UNCC in this program.

FRESHMAN YEAR

Chemistry 101, 101L	4	Biology 211	
Mathematics 103	3	Chemistry 102, 102L	
English 101	3	Mathematics 122	
Electives	6-7	English 102	
		Elective	3
	16-17		17-1

SOPHOMORE YEAR

Biology 221	4	Biology 231	
Biology 331	3-4	Chemistry elective	
Chemistry 231, 231L	4	Electives	6
Elective	3		
	14-15		14-

*It is possible to obtain a B.S. degree in biology by careful planning with the adviser.

JUNIOR YEAR

Biology 311	3-4	Biology 491	1
Electives	11-12	Electives	14-16
	14-16		15-16

TOTAL 90-97

SENIOR YEAR

At an approved School of Medical Technology

COURSE DESCRIPTIONS

BIOLOGY

BIO 101. PRINCIPLES OF BIOLOGY. (4) Recommended as a general university elective, without credit toward the major. Fundamental principles of life. Audio-tutorial presentation. Equivalent to three lecture hours and one laboratory period of two hours a week.

BIO 203. BACTERIOLOGY. (3) Prerequisites: one semester of biology and one semester of chemistry. No credit toward a biology major. Basic physiology of bacteria and viruses, with emphasis on the pathogens and the epidemiology of microbial diseases. Three lecture hours a week.

BIO 203L. BACTERIOLOGY LABORATORY. (1) Prerequisite or corequisite: BIO 203. One laboratory period of three hours a week.

BIO 205. HUMAN ANATOMY AND PHYSIOLOGY. (3) Prerequisite: one semester of biology. No credit toward a biology major. Basic fundamentals of the anatomy and physiology of the human body as an integrated unit. Three lecture hours a week.

BIO 205L. HUMAN ANATOMY AND PHYSIOLOGY LABORATORY. (1) Prerequisite or corequisite: BIO 205. One laboratory period of three hours a week.

BIO 211. PLANT BIOLOGY. (4) Prerequisite: open to majors and non-majors; one course in biology prerequisite for non-majors. The morphology, function, reproduction, phylogeny and ecology of plants. Three lecture hours and one laboratory period of three hours a week.

BIO 221. ANIMAL BIOLOGY. (4) Prerequisite: open to majors and non-majors; one course in biology prerequisite for non-majors. The morphology, function, development, phylogeny and ecology of the principle invertebrate and vertebrate types. Three lecture hours and one laboratory period of three hours a week.

BIO 231. CELL BIOLOGY. (4) Prerequisite: two semesters of chemistry. Structural, functional and genetic aspects of cells; principles underlying living systems. Three lecture hours and one laboratory period of three hours a week.

BIO 301. NATURAL HISTORY. (4) Prerequisite: open to students in elementary education and to others with consent of department. No credit toward a biology major. Ecological aspects of plant and animal distribution, the importance of conservation of natural resources, and plant and animal identification. Three lecture hours and one laboratory period of three hours a week.

BIO 311. MICROBIOLOGY. (3) Prerequisite: BIO 231. Morphology, physiology and methods of culture and control of bacteria, viruses and related micro-organisms. Three lecture hours a week.

BIO 311L. MICROBIOLOGY LABORATORY. (1) Prerequisite or corequisite: BIO 311. One laboratory period of three hours a week.

BIO 319. PLANT SYSTEMATICS. (4) Prerequisite: BIO 211. Identification, classification and phylogenetic relationships of seed plants, including preparation and preservation of specimens. Two lecture hours and two laboratory periods of two hours each week.

BIO 321. VERTEBRATE ZOOLOGY. (4) Prerequisite: BIO 221 or consent of department. Taxonomy, anatomy, physiology and life histories of vertebrates, with emphasis on local forms. 321A - Ichthyology; 321B - Herpetology; 321C - Ornithology; 321D - Mammalogy. Three lecture hours and one laboratory period of three hours a week.

BIO 323. PARASITOLOGY. (4) Prerequisite: BIO 221. Morphology, life cycles, ecology, taxonomy and economic importance of parasites. Three lecture hours a week and one laboratory period of three hours a week.

BIO 325. INVERTEBRATE ZOOLOGY. (4) Prerequisite: BIO 221. Taxonomy, anatomy, physiology and life histories of invertebrates, with main emphasis on species important to man. Three lecture hours and one laboratory period of three hours a week.

BIO 331. GENETICS. (3) Prerequisite: BIO 231 or one course in biology and consent of department. Basic concepts of heredity, principles of classical and molecular genetics. Three lecture hours a week.

BIO 331L. GENETICS LABORATORY. (1) Prerequisite or corequisite: BIO 331. One laboratory period of three hours a week.

BIO 333. PLANT GROWTH AND DEVELOPMENT. (4) Prerequisite: BIO 211 and 231. Growth and development of plants with emphasis on physical and chemical differentiation. Three lecture hours and one laboratory period of three hours a week.

BIO 335. HUMAN GENETICS. (3) Prerequisite: one semester of biology. The inheritance of physical and mental characteristics in man. Effects on mutation, selection, migration and environment are considered. Three lecture hours a week.

BIO 338. EMBRYOLOGY. (3) Prerequisite: BIO 221 or 101 with consent of department. Developmental processes occuring chiefly during gametogenesis, fertilization, early embryogenesis and organogenesis. Three lecture hours a week.

BIO 338L. EMBRYOLOGY LABORATORY. (1) Prerequisite or corequisite: BIO 338. One laboratory period of three hours a week.

BIO 345. COMPARATIVE VERTEBRATE ZOOLOGY. (4) Prerequisite: BIO 221. Comparative studies of the anatomy, physiology and functional adaptations of selected vertebrates with emphasis on evolutionary developments, especially in mammals. Three lecture hours and one laboratory period of three hours a week.

BIO 347. HISTOLOGY. (4) Prerequisite: BIO 221 or 231 or 101 with consent of department. Animal tissues and organs; techniques of preparing tissues for analysis. Two lecture hours and two laboratory periods of two hours a week.

BIO 352. VERTEBRATE PALEONTOLOGY. (3) Prerequisite: BIO 221 or consent of department. Evolution of vertebrate animals from the first fishes to man. Three lecture hours a week.

BIO 355. ANIMAL BEHAVIOR. (3) Prerequisite: one course in biology or consent of department. Causation, development, function and evolution of behavior. Topics include communication systems, social systems and behavior of man. Three lecture hours a week.

BIO 355L. ANIMAL BEHAVIOR LABORATORY. (1) Prerequisite or corequisite: BIO 355. One laboratory period of three hours a week.

BIO 361. ECOLOGY. (3) Prerequisites: BIO 211, 221, and one course in chemistry. Interrelationships of organisms and their environment. Three lecture hours a week.

BIO 361A. ECOLOGY LABORATORY. (1) Prerequisite or corequisite: BIO 361. One laboratory period of three hours per week.

BIO 363. FIELD BIOLOGY. (4) Prerequisite: BIO 211 and 221. Roles of soils, water and climate on plant growth and distribution; plant succession and its effect on animal distribution; identification and life histories of selected plants and animals. Three lecture hours and one laboratory period of three hours a week.

BIO 369. ENVIRONMENTAL PROBLEMS. (3) Prerequisite: one course in biology and one course in chemistry. Biological aspects of air, water and land pollution; resource depletion; and overpopulation. Three lecture hours a week.

BIO 373. PLANT PHYSIOLOGY. (4) Prerequisites: BIO 211 and 231. Metabolic and physiological processes of plants and conditions which affect or regulate these processes. Three lecture hours and one laboratory period of three hours a week.

BIO 375. ANIMAL PHYSIOLOGY. (4) Prerequisite: BIO 221 and two courses in chemistry. Fundamental control mechanisms which operate to maintain the homeostatic state. Three lecture hours and one laboratory period of three hours a week.

BIO 391. RADIATION BIOLOGY. (3) Prerequisite: BIO 231 and one course in organic chemistry. Biological effects of ionizing radiation on living matter. Three lecture hours a week.

BIO 395. SPECIAL TOPICS IN BIOLOGY. (1-4) May be repeated for credit. Prerequisite: consent of department. Used to comply with requests for special topics and advanced studies in biology. Lecture hours and laboratory hours will vary with the courses taught.

BIO 397. INTERNSHIP IN COMMUNITY EDUCATION AND SERVICE. (3) Prerequisites: junior standing, acceptance into the program and approval of the department. Corequisite: SBS 398. A project oriented, service-learning internship with cooperating community organizations. The Department of Biology has the option of recognizing this credit as fulfilling departmental requirements and granting permission to repeat for credit.

BIO 401. INTEGRATIVE STUDIES IN BIOLOGY. (3) No credi toward a biology major, except one hour which may be substituted for Biology 491. A course for, but not limited to, persons preparing to teach grades 7-12. An integration of the various disciplines o biology stressing the attitudes and techniques necessary to teach laboratory-oriented courses. Three lecture hours a week.

BIO 425. NEUROBIOLOGY. (3) Prerequisite: BIO 231 or consen of department. Physiology and anatomy of nervous systems. Three lecture hours a week.

BIO 425L. NEUROBIOLOGY LABORATORY. (1) Prerequisite o corequisite: BIO 425. One laboratory period of three hours a week

BIO 437. CYTOGENETICS. (4) Prerequisite: BIO 331. Plant an animal cells, with emphasis on problems of chromosonal organiza tion, function and behavior including the role of chromosom number and aberrations in speciation and evolution. Three lectur hours and one laboratory period of three hours a week.

BIO 438. MECHANISMS IN DEVELOPMENT. (3) Prerequisite BIO 231 and 338, or consent of department. Cellular and molecula bases of differentiation; an exploration of the experimental analysi of causal and controlling factors in development. Three lecture an discussion hours a week.

BIO 451. EVOLUTION AND POPULATION GENETICS. (3) Prerequisite: BIO 331 or 335. Theories of evolution and forces which affect population genetics. Three lecture hours a week.

BIO 461. LIMNOLOGY AND OCEANOGRAPHY. (3) Prerequisite: two courses in chemistry. Geological, physical, chemical and biological aspects of lakes, streams, estuaries and oceans. Three lecture hours a week.

BIO 416L. LIMNOLOGY AND OCEANOGRAPHY LABORATORY. (1) Prerequisite or corequisite: BIO 461. One laboratory period of 3 hours a week.

BIO 473. IMMUNOLOGY. (3) Prerequisites: BIO 311 and one semester of organic chemistry. Basic concepts of disease resistance in mammals: non-specific defense mechanisms, physiochemical properties and interactions of antigens and antibodies, and cell-associated defense phenomena. Three lecture hours a week.

BIO 473L. IMMUNOLOGY LABORATORY. (1) Prerequisite or corequisite: BIO 473. One laboratory period of three hours a week.

BIO 474. VIROLOGY. (4) Prerequisite: BIO 311, 311L and two courses in organic chemistry. Morphology, classification, genetics and pathogenicity of bacterial, plant and animal viruses. Three lecture hours and one laboratory period of three hours a week.

BIO 475. ENDOCRINOLOGY. (3) Prerequisite: BIO 375 and one course in organic chemistry. Endocrine glands and their physiological roles in metabolism, growth and reproduction. Three lecture hours a week.

BIO 475L. ENDOCRINOLOGY LABORATORY. (1) Prerequisite or corequisite: BIO 475. One laboratory period of three hours a week.

BIO 476. COMPARATIVE INVERTEBRATE PHYSIOLOGY. (3) Prerequisite: BIO 221, 231 and one course in organic chemistry or consent of department. Maintenance of body fluids; acquisition, processing and distribution of nutrient materials; gas exchange; movement and coordination. Three hours a week.

BIO 476L. COMPARATIVE INVERTEBRATE PHYSIOLOGY LABORATORY. (1) Prerequisite or corequisite: BIO 476. One laboratory period of three hours a week.

BIO 477. CELL PHYSIOLOGY. Prerequisites: BIO 231 and CHE 231. The fundamental physiochemical properties of cells. Three lecture hours a week.

BIO 484. RADIOISOTOPE TECHNIQUES. (4) Prerequisite: two semesters of chemistry. Use of radioisotopes in science: properties of sub-atomic particles, instrumentation, safety procedures and radioisotope labeling. Three lecture hours and one laboratory period of three hours a week.

BIO 491. SEMINAR. (1) Required of all majors, to be taken during the senior year. Pertinent topics in the field of biology, and reports on original research are discussed. Students are required to act as the discussion leaders. One lecture hour a week.

BIO 497. INVESTIGATIONS IN BIOLOGY. (1-4) May be repeated for credit. Prerequisite: consent of the department. A course designed to allow junior and senior biology majors to initiate research projects in their respective fields of interest.

DEPARTMENT OF CHEMISTRY

Chairman: Professor Gibson
Charles H. Stone Professor of Chemistry: Burson
Professors: Crosthwaite, Kuppers
Associate Professors: Bush, DuBois, Walsh
Assistant Professors: Cassen, Cooke, Howard, Jones, Mattingly, Rillema

Students planning to start careers as chemists with the baccalaureate degree and those who intend to prepare for graduate study in chemistry should pursue the B.S. degree.

A major in chemistry leading to the B.S.* degree consists of a minimum of 44 semester hours of chemistry among which must be included Chemistry 101, 102, 101L, 102L, 231, 232, 231L, 232L, 311, 341, 342, 411, 421, 431 and two semesters of Chemistry 495. Related work in mathematics and physics must include Mathematics 141, 142, and 241 or 271 and Physics 221, 231, 251 and 252. Two years of German or Russian are required for the B.S. degree.

The B.A. curriculum can be tailored to fit individual needs of those preparing for medical and dental schools, those considering graduate work in sciences closely related to chemistry and those desiring a liberal education with concentration in chemistry and related natural sciences.

A major in chemistry leading to the B.A. degreee consists of a minimum of 28 semester hours of chemistry among which must be included Chemistry 101, 102, 101L, 102L, 231, 232, 231L, 232L and 311. Related work must include Mathematics 141, 142 and eight hours of physics.

Students who complete a major in chemistry automatically meet the chemistry subject matter requirements, on the secondary level, for teacher certification in North Carolina. Students seeking teacher certification should consult a coadviser in the College of Human Development and Learning for detailed planning of their professional education.

*The B.S. degree program is approved by the Committee on Professional Training of the American Chemical Society

Chemical engineering, dentistry, medicine, or pharmacy students have the option of majoring in chemistry. Interested students should consult the catalog section on preparation for professional schools for the appropriate suggested curriculum.

B.A. IN CHEMISTRY WITH AN OPTION IN MEDICAL TECHNOLOGY

A student may complete the departmental requirements for the B.A. degree in Chemistry in three years. Upon satisfactory completion of training in medical technology at a school of medical technology, which has been approved by the National Registry of Clinical Pathologists and UNCC, the student may receive a B.A. degree in Chemistry from UNCC. A maximum of 30 hours will be accepted from the school of medical technology. Four of these hours will apply toward the requirements for the major in chemistry. The student must have at least a 2.0 average, overall and in the major, at the end of the junior year. The final 30 hours counted toward the degree and the last 12 hours counted toward the major prior to entering a school of medical technology must be taken at UNCC. The student may obtain information from his departmental adviser concerning those specific schools of medical technology cooperating with UNCC in this program. Individual applications for admission to a particular school of medical technology must be submitted.

Honors Program in Chemistry

The recommended curriculum for the B.S. degree in Chemistry includes independent study and seminar presentation during the final year of study. To obtain a degree with Honors in Chemistry, the student must complete two semesters of independent research with a grade of Pass Honors, two semesters of the senior seminar with a grade of Pass Honors and at least one junior level laboratory course with a grade of Pass Honors. The student will formally enter the honors program at the beginning of his junior year or halfway through his junior year. Consideration for admission to the program may be initiated by the student or by any faculty member. The Honors Committee of the Chemistry Department will formally approve admission.

The department, in addition to the foregoing undergraduate programs, offers the *Master of Science degree in Chemistry*. This is a research-based program in which major emphasis is placed upon the research project and required thesis. Further details may be found in the *Graduate Catalog*.

RECOMMENDED CURRICULUM FOR THE B.A. DEGREE IN CHEMISTRY

FRESHMAN YEAR

Chemistry 101*	3	Chemistry 102*	3
Chemistry 101L*	1	Chemistry 102L*	1
English 101	3	English 102	3
Mathematics 103**	3	Mathematics 141**	4
Social Science	3	Social Science	3
Elective	3	Elective	3
	16		17

SOPHOMORE YEAR

Chemistry 231	3	Chemistry 232	3
Chemistry 231L	1	Chemistry 232L	1
Mathematics 142	4	German 102	4
German 101	4	Humanities	3
Humanities	3	Electives	6
	15		17

JUNIOR YEAR

Chemistry 311	4	Chemistry	
Mathematics	3	Mathematics	
Physics	4	Physics	
German 201	4	German 202	
		Elective	
	15		1

SENIOR YEAR

Chemistry	4	Chemistry	
Electives	12	Electives	1
	16		1

*Students who can demonstrate to the Chemistry Department proficiency in Chemistry 101, 10 101L, and 102L (Principles of Chemistry) may start with Chemistry 231 and 231L (see Credit b Examination, pages 59-60).

**For proper placement in the mathematics sequence, the student must take placement examination offered by the Mathematics Department.

RECOMMENDED CURRICULUM FOR THE B.S. DEGREE IN CHEMISTRY

FRESHMAN YEAR

Chemistry 101*	3	Chemistry 102*	3
Chemistry 101L*	1	Chemistry 102L*	1
English 101	3	English 102	3
Mathematics 141**	4	Mathematics 142**	4
German 101	4	German 102	4
	15		15

SOPHOMORE YEAR

Chemistry 231	3	Chemistry 232	3
Chemistry 231L	1	Chemistry 232L	1
Mathematics 241 or 271	3	Physics 231	3
Physics 221	3	Physics 252	2
Physics 251	1	German 202	4
German 201	4	Elective	3
	15		15

JUNIOR YEAR

Chemistry 341	4	Chemistry 342	4
Chemistry 311	4	Chemistry 411	4
Humanities	3	Humanities	3
Social Science	3	Social Science	3
	14		14

SENIOR YEAR

Chemistry 421	4	Chemistry 431	4
Chemistry 490	2	Chemistry 490	2
Chemistry 495	1	Chemistry 495	1
Electives	9	Electives	9
	16		16

*Students who can demonstrate to the Chemistry Department proficiency in Chemistry 101, 102, 101L, and 102L (Principles of Chemistry) may start with Chemistry 231 and 231L (See Credit by Examination, pages 59-60).

**For proper placement in the mathematics sequence, the student must take placement examinations offered by the Mathematics Department.

RECOMMENDED CURRICULUM FOR THE B.A. IN CHEMISTRY WITH AN OPTION IN MEDICAL TECHNOLOGY

FRESHMAN YEAR

Chemistry 101*	4	Chemistry 102*	3
Chemistry 101L*	1	Chemistry 102L*	1
Mathematics 103**	3	Mathematics 141**	4
English 101	3	English 102	3
Physics	4	Physics 102	4
	14		15

SOPHOMORE YEAR

Chemistry 231	3	Chemistry 232	3
Chemistry 231L	1	Chemistry 232L	1
Mathematics 142	4	Biology 231	4
Biology 221	4	Social Science	3
Social Science	3	Humanities	6
	15		17

JUNIOR YEAR

Chemistry 311	4	Chemistry Elective	4
Biology 375	4	Electives	9-11
Biology 311	3		
Biology 311A	1		
Elective	3		
	15		13-15

TOTAL 90-92

SENIOR YEAR

At an approved school of medical technology.

COURSE DESCRIPTIONS

CHEMISTRY

Separate lecture and laboratory sections - Although the laboratory and lecture sections of CHE 101, 102, 103, 104, 231 and 232 are taught as separate courses, it is strongly recommended that students take the appropriate laboratory concurrently with the lecture. Students with severe scheduling problems or students with course programs which do not require the laboratory may take the lecture without the laboratory.

*Students who can demonstrate to the Chemistry Department proficiency in Chemistry 101, 101L, and 102L (Principles of Chemistry) may start with Chemistry 231 and 231L (see Credit by Examination, pages 59-60).

**For proper placement in the mathematics sequence, the student must take placement examination offered by the Mathematics Department

Prior to the last day to drop a course without grade evaluation, students withdrawing from lecture must also withdraw from any laboratory course for which the lecture is a corequisite. After the last day to drop a course without grade evaluation, the lecture may be dropped and the laboratory continued only with the consent of the student's laboratory instructor.

Students using CHE 101 and 102 or CHE 103 and 104 to satisfy the *University Requirements* for the B.A. and B.S. Degrees (pages 43-44) must also take CHE 101L and 102L, or CHE 103L and 104L, respectively.

CHE 101. PRINCIPLES OF CHEMISTRY. (3) Prerequisite or corequisite: MAT 101 or 103. A principles-oriented course for science majors. Fundamental postulates and laws of chemistry; the relationship of atomic structure to physical and chemical properties of the elements. Two lecture hours and one recitation hour per week.

CHE 101L. PRINCIPLES OF CHEMISTRY LABORATORY. (1) Prerequisite or corequisite: CHE 101. Experimental investigations involving the fundamental postulates and laws of chemistry. One laboratory period of three hours per week.

CHE 102. PRINCIPLES OF CHEMISTRY. (3) Prerequisite: CHE 101. Continuation of CHE 101. Two lecture hours and one recitation hour per week.

CHE 102L. PRINCIPLES OF CHEMISTRY LABORATORY. (1) Prerequisites: CHE 101 and 101L. Prerequisite or corequisite: CHE 102. Continuation of CHE 101L. One laboratory period of three hours per week.

CHEMISTRY 106L. INTRODUCTION TO MODERN LABORATORY METHODS. (1) Prerequisite or corequisite: CHE 102. One laboratory period of three hours per week. The laboratory will consist of open-ended studies on topics compatible with the CHE 102 lecture material. Students use techniques common to those used in current chemical research; modern instrumentation is used extensively. The background needed to utilize minicomputers in data acquisition and data reduction is presented. The course is intended for students planning to take additional chemistry courses and can be substituted for the CHE 102L requirement for all degrees in chemistry.

CHE 103. GENERAL CHEMISTRY. (3) Designed primarily for non-science majors. Fundamentals of chemistry and selected topics from inorganic, organic, colloid, nuclear and biochemistry. Three lecture hours per week (Credit for both 101 and 103 will not be given.)

CHE 103L. GENERAL CHEMISTRY LABORATORY. (1) Prerequisite or corequisite: CHE 103. Laboratory investigations into the nature of inorganic and organic compounds. One laboratory period of three hours per week. (Credit for both 101L and 103L will not be given.)

CHE 104. GENERAL CHEMISTRY. (3) Designed primarily for non-science majors. Prerequisite: CHE 103. Continuation of CHE 103 including qualitative analysis. Three lecture hours per week. (Credit for both 102 and 104 will not be given.)

CHE 104L. GENERAL CHEMISTRY LABORATORY. (1) Prerequisites: CHE 103 and 103L. Prerequisite or corequisite: CHE 104. Continuation of CHE 103L including qualitative analysis. One laboratory period of three hours per week. (Credit for both 102L and 104L will not be given.)

CHE 225. INORGANIC CHEMISTRY. (3) Prerequisite: CHE 102. Descriptive inorganic chemistry including acid-base and non-aqueous solvent concepts. Three lecture hours a week.

CHE 231. ORGANIC CHEMISTRY. (3) Prerequisite: CHE 102. Descriptive principles and techniques of organic chemistry and their applications to reactions of aliphatic and aromatic compounds and natural products. Three lecture hours per week.

CHE 231L. ORGANIC CHEMISTRY LABORATORY. (1) Prerequisites: CHE 102 and CHE 102L. Prerequisite or corequisite: CHE 231. Laboratory investigations into the physical and chemical properties of organic compounds. One laboratory period of three hours per week.

CHE 232. ORGANIC CHEMISTRY (3). Prerequisite: CHE 231. Continuation of CHE 231. Three lecture hours per week.

CHE 232L. ORGANIC CHEMISTRY LABORATORY. (1) Prerequisites: CHE 231 and 231L. Prerequisite or corequisite CHE 232. Continuation of CHE 231L. One laboratory period of three hours per week.

CHE 241. SURVEY OF PHYSICAL CHEMISTRY. (3) Prerequisites: CHE 102, 102L, MAT 120 or one semester of calculus (high school or higher), PHY 101 or one semster of physics (high school or higher). A course designed for students in the life sciences or others desiring a one-semester survey of the physical aspects of chemistry. Application of thermodynamics to chemical reactions, energy transfer processes, and chemical and physical equilibria; the study of reaction rates and mechanisms; structure of gases, liquids and solids; molecular structure and spectroscopy. Three lecture hours per week.

CHE 311. QUANTITATIVE ANALYSIS. (4) Prerequisite: CHE 102, 102L. Introductory course in quantitative and analytical chemistry. Principles of equilibrium, classical and simple instrumental approaches are considered. Two lecture hours and two laboratory periods of three hours each week.

CHE 312. BIORGANALYTICAL CHEMISTRY. (4) Prerequisites: Chemistry 231, 231L and 311. Introductory course in modern analytical methods, with laboratory applications emphasiz-

ing experiments in organic chemistry, biochemistry and chemical aspects of the life sciences. Two lecture hours and two laboratory periods of three hours each week.

CHE 341. PHYSICAL CHEMISTRY. (4) Prerequisites: CHE 102, 102L, PHY 231 and 252. Prerequisite or corequisite: MAT 241 or 271. The application of classical thermodynamics and the phase rule to chemical equilibrium; electrochemistry; the kinetic theory of gases and elements of statistical mechanics applied to chemical processes; atomic and molecular structure interpreted in quantum mechanical terms. Three lecture hours and one laboratory period of three hours per week. (Credit for both 341 and 345 will not be given.)

CHE 342. PHYSICAL CHEMISTRY. (4) Prerequisite: CHE 341. Continuation of CHE 341. Three lecture hours and one laboratory period of three hours a week. (Credit for both 342 and 346 will not be given.)

CHE 345. PHYSICAL CHEMISTRY. (3) Prerequisite: consent of the instructor. Same course as CHE 341 but taught without the laboratory. Three lecture hours a week. (Credit for both 341 and 345 will not be given.)

CHE 346. PHYSICAL CHEMISTRY. (3) Prerequisite: CHE 341 or 345. Same course as CHE 342 but taught without the laboratory. Three lecture hours a week. (Credit for both 342 and 346 will not be given.)

CHE 375. INTRODUCTORY BIOCHEMISTRY. (3) Prerequisite: CHE 232. The chemical constitution of living matter, biochemical processes. Three lecture hours per week.

CHE 390. SPECIAL TOPICS IN CHEMISTRY. (1-4) Prerequisite: consent of department. May be repeated for credit. Lecture and/or laboratory hours will vary with the nature of the course taught. Topics chosen from analytical, biochemistry, inorganic, organic and physical chemistry.

CHE 397. INTERNSHIP IN COMMUNITY EDUCATION AND SERVICE. (3) Prerequisites: junior standing, acceptance into the program and approval of the department. A project oriented, service learning internship with cooperating community organizations. Credit toward the B.A. and B.S. degrees in chemistry will not be given for this course. May be repeated for credit with permission of the Chemistry Department. This course is offered on a pass/no-credit basis only.

CHE 411. INSTRUMENTAL ANALYSIS. (4) Prerequisites: CHE 311 and 341. A discussion of modern electrochemical and chromatographic techniques and of ultraviolet, infrared, NMR, ESR, Raman and mass spectroscopy. The discussion includes theory and practice, with considerable attention given to the instrument and elementary electronics involved in the techniques. Two lecture hours and two three-hour laboratory periods a week.

CHE 412. APPLIED MINICOMPUTER INTERFACING IN CHEMISTRY. (4) Prerequisite: Departmental approval. Three lecture hours and one laboratory period of three hours each week. The background needed to apply minicomputer interfacing in chemical research, including machine language programming unique to DEC PDP-8 family minicomputers and elementary digital electronics will be presented, and application of computer automation in chemical research will be discussed. The laboratory will involve individual projects; the design, development and implementation of the software and hardware needed to solve an interfacing project selected by the student. The course is designed to provide a foundation for the use of computer automation in research. No background in programming or electronics is required.

CHE 421. ADVANCED INORGANIC CHEMISTRY. (4) Prerequisite: CHE 342. Theoretical inorganic chemistry including the application of physico-chemical principles to the study of inorganic systems. Laboratory work involves inorganic preparations and characterization techniques. Three lecture hours and one laboratory period of three hours a week.

CHE 431. ADVANCED ORGANIC CHEMISTRY. (4) Prerequisites: CHE 232, 232L and 311. Recent developments in organic chemistry. Laboratory techniques of organic chemistry with emphasis on qualitative organic analysis including instrumental methods. Two lecture hours and two laboratory periods of three hours each week.

CHE 445. ADVANCED PHYSICAL CHEMISTRY. (3) Prerequisite: CHE 342. Topics selected from quantum chemistry and/or statistical thermodynamics. Three lecture hours per week.

CHE 475. PHYSICAL BIOCHEMISTRY. (3) Prerequisites: CHE 232, 232L and 341 or 345. Colloid systems, equilibria in biological fluids, mass and energy transport in fluids and in association with membranes, energy storage and dissipation with relation to specific chemical bonding, enzyme kinetics. Three lecture hours per week.

CHE 490. INDEPENDENT STUDY AND RESEARCH. (1 to 4) Prerequisite: consent of the instructor overseeing the research. Independent study and research. A senior project in any of these fields of chemistry: organic, physical, analytical, inorganic chemistry or biochemistry; introduction to research. Hours in consultation, library and laboratory to be determined. May be repeated for credit.

CHE 495. CHEMISTRY SEMINAR. (1) Prerequisite: senior standing. Discussion of recent developments and special topics in chemistry. Written and oral reports are required.

CHE 590. SPECIAL TOPICS IN CHEMISTRY. (1-4) Prerequisite: consent of department. May be repeated for credit. Lecture and/or laboratory hours will vary with the nature of the course taught. Selected topics in chemistry.

DEPARTMENT OF MATHEMATICS

Chairman: Professor Schell
Professors: Embry, Goodrum, Nixon
Associate Professors: Lambert, Lucas, Schurle
Assistant Professors: Archer, Hameed*, Hedstrom, Houston, Johnson, Ju, Lan, Leiva, Niccolai, Pellerin, Quinn, Reiter, Roth, Stavrakas, Stewart, Wichnoski, Wright
Lecturers: Han, Keith
Part-Time Instructors: Ferrier, Fields, Helmintoller, Jones, Lover, Maier, Priebe, Joan Quinn, B. Reiter, Richey, Taylor, Thomas, Wardrop, Whitton

Two baccalaureate degrees are offered by the Department of Mathematics, a Bachelor of Arts degree and a Bachelor of Science degree. Within each degree one may select one of two options, either the option in Mathematics or the new option in Computer Science. The description of the Mathematics option follows immediately. The description of the Computer Science option begins on page 266.

OPTION IN MATHEMATICS

A major in mathematics for the B.A. degree consists of a minimum of 27 semester hours of mathematics courses numbered 140 and above and approved by the department. Related work must be approved by the department.

A major in mathematics for the B.S. degree consists of a minimum of 39 semester hours of mathematics courses numbered 140 and above and approved by the department. Related work must be approved by the department. A student planning to study mathematics in graduate school should take French, German, or Russian.

An entering freshman who plans to take Mathematics 141, in particular a mathematics major, will first enroll in Mathematics 103, unless exempted by the department. It is recommended that a prospective freshman major enroll in this course during the summer session immediately preceding his freshman year.

Specific requirements for the B.A. and B.S. degree will vary with the specific objectives of the student. Some objectives which are possible are: graduate work, applied mathematics, statistics, computer science, certification for elementary or secondary teaching.

*On leave of absence.

CURRICULUM OUTLINE FOR THE B.A. OPTION IN MATHEMATICS

FRESHMAN YEAR

Mathematics 141	4	Mathematics 142	4
English 101	3	English 102	3
Social Science	3	Social Science	3
Language (Or Elective	4(3)	Language (Or Elective)	(3)
	14(13)		14(13)

SOPHOMORE YEAR

Mathematics 241	3	Mathematics 271	3
Mathematics 263 (or 264)	3	Mathematics 264 (or 263)	3
Humanities	3	Humanities	3
Science	4	Science	4
Related Work	3	Related Work	3
	16		16

JUNIOR YEAR

Mathematics 3xx or 4xx	3	Mathematics 3xx or 4xx	3
Related Work	3	Related Work	3
Electives	9	Electives	9
	15		15

SENIOR YEAR

Mathematics 3xx or 4xx	3	Mathematics 3xx or 4xx	3
Related Work	3	Related Work	3
Electives	10	Electives	8-10
	16		14-16

CURRICULUM OUTLINE FOR THE B.S. OPTION IN MATHEMATICS

FRESHMAN YEAR

Mathematics 141	4	Mathematics 142	4
English 101	3	English 102	3
Social Science	3	Social Science	3
Language (Or Elective)	4(3)	Language (Or Elective)	4(3)
	14(13)		14(13)

SOPHOMORE YEAR

Mathematics 241	3	Mathematics 271	3
Mathematics 263 (or 264)	3	Mathematics 264 (or 263)	3
Humanities	3	Humanities	3
Science	4	Science	4
Related Work	3	Related Work	3
	16		16

JUNIOR YEAR

Mathematics 341	3	Mathematics 3xx or 4xx	3
Science	3-4	Related Work	3
Related Work	3	Electives	9
Electives	3		
	15-16		15

SENIOR YEAR

Mathematics 3xx or 4xx	6	Mathematics 3xx or 4xx	6
Related Work	3	Related Work	3
Electives	6	Electives	6-8
	15		15-17

COURSE DESCRIPTIONS

MATHEMATICS

The first digit of each course number indicates the year in which the course is normally taken: 1 denoting the freshman year and 2, 3, 4 denoting the sophomore, junior and senior years respectively; a first digit of 5 denotes graduate courses which are also for undergraduate credit; first digits of 6 and 7 denote courses open only for graduate credit.

The middle digit of each course number generally indicates the subarea of mathematics to which the course belongs according to the following scheme:

0: General concepts; foundations and history of mathematics

1: Decision mathematics

2: Probability and statistics

3: Mathematics Education

4: Analysis

5: General topics

6: Algebra

7: Applied mathematics

8: Geometry-topology

9: Seminars and independent study

(MAT 120 is the only exception to this scheme.)

MAT 101. BASIC CONCEPTS OF MATHEMATICS. (3) Algebraic properties of the real number system; sets, relations, functions; graphing and solution of equations and inequalities; vectors and matrices; introduction to linear programming. (Credit not given to students having credit for MAT 103.)

MAT 103. CONCEPTS OF MATHEMATICS. (3) A study of the real number system including the basic field operations, the order relation and absolute value; solutions of equations and inequalities; sets, functions and relations; graphing; brief treatment of trigonometry. (Credit not given for MAT 101, 103A where credit is awarded for MAT 103.)

MAT 103A. CONCEPTS OF TRIGONOMETRY. (1) Prerequisite: placement by the Department of Mathematics. A brief study of the trigonometric functions; trigonometric identities; solution of equations and triangles; graphs of trigonometric functions. (Credit not given for both MAT 103 and 103A).

MAT 105. COMPUTATIONAL MATRIX ALGEBRA. (1) Prerequisite: none. An introduction to the solution of systems of linear algebraic equations. Basic properties of matrices and determinants will be introduced and several methods of solution for linear algebraic systems will be developed. The computational efficiency of the solution techniques will be compared. Further topics to include the algebra of complex numbers; two and three dimensionl vector algebra, inner product and vector cross product. One lecture and one laboratory meeting per week.

MAT 120. CALCULUS. (3) Prerequisite: MAT 101 or 103. A brief treatment of basic concepts of differential and integral calculus with applications to business and to the social and life sciences; polynomial, exponential and logarithmic functions.

MAT 122. ELEMENTS OF STATISTICS. (3) Prerequisite: MAT 101 or 103. An introduction to the principles of statistical measures and hypothesis testing. Mean, variance, standard deviation; confidence intervals; binominal and normal distributions; contingency tables, chisquare test; nonparametric tests including the sign test and rank sum test, the t-test; linear regression correlation and an introduction to analysis of variance and multiple regression.

MAT 130. ELEMENTARY SCHOOL MATHEMATICS I. (3) A logical treatment of the structure of the number system and the basic ideas needed for teaching elementary school mathematics with emphasis on the concepts involved rather than the algorithms. (For elementary teacher candidates only.)

MAT 131. ELEMENTARY SCHOOL MATHEMATICS II. (3) Prerequisite: MAT 130. A continuation of MAT 130 with additional study in informal geometry.

MAT 141. DIFFERENTIAL AND INTEGRAL CALCULUS I. (4) Prerequisite: MAT 103, Limits, continuity of R→R functions; differentiation and integration of rational functions; extreme values; concavity; curve sketching; velocity and acceleration; area; volumes of rotation; work; arc length.

MAT 142. DIFFERENTIAL AND INTEGRAL CALCULUS II. (4) Prerequisite: MAT 141 with a grade of *C* or better. Differential and integral calculus of transcendental functions (trigonometric, inverse trigonometric, exponential and logarithmic functions); methods of integration and further applications; indeterminate forms, improper integrals, series.

MAT 211. INTRODUCTION TO OPERATIONS RESEARCH. (3) Prerequisites: MAT 120 and CSC 100. Modeling and Graph Theory with applications to linear programming, critical path analysis, transportation and allocation problems, and queueing theory.

MAT 221. INTRODUCTION TO PROBABILITY. (3) Prerequisite: MAT 101 or 103. A study of the elements of probability theory. Sample spaces, events, probability of an event, conditional probability, independent events. Random variables, mean, variance and standard deviation, joint probability functions, independent random variables, sampling covariance and correlation, Binomial distribution and hypothesis testing.

MAT 241. DIFFERENTIAL AND INTEGRAL CALCULUS III. (3) Prerequisite: MAT 142 with a grade of *C* or better. Introduction to vector geometry; differential calculus of several variables, multiple integration; line integrals.

MAT 263. INTRODUCTORY MODERN ALGEBRA. (3) Prerequisite: MAT 103. The content is chosen to emphasize the axiomatic approach to algebraic structures through many concrete examples taken from rings, finite fields, polynomials and groups. The course is intended to familiarize the student with algebraic structures by emphasizing that abstract concepts arise from the analysis of concrete situations. It will also enhance transitions to more advanced algebra courses.

MAT 264. MATRICES AND LINEAR ALGEBRA. (3) Prerequisites: MAT 103. This course will emphasize the following topics: Algebra of Matrices, Solutions of Linear Equations, Abstract Vector Spaces, Determinants, Similarity of Matrices, Inner Products and unitary similarity, Quadratic forms. This course is intended to provide a firm foundation and working knowledge of these areas and will be of particular value to engineering and science majors as well as mathematics majors.

MAT 271. DIFFERENTIAL EQUATIONS. (3) Prerequisite: MAT 142 with a grade of *C* or better. An introduction to the study of differential equations; first order equations; general theory of ordinary linear differential equations; Laplace transform.

MAT 300. TOPICS IN FOUNDATIONS OR HISTORY OF MATHEMATICS. (2-3) Prerequisite: consent of the department. Topics in the foundations or the history of mathematics selected so as to supplement regular course offerings in this area of mathematics. Topics may be proposed by students and/or faculty and must be approved by the department. (May be repeated for additional credit with the approval of the department.)

MAT 310. TOPICS IN DECISION MATHEMATICS. (2-3) Prerequisite: consent of the department. Topics in decision mathematics selected so as to supplement regular course offerings in this area of mathematics. Topics may be proposed by students and/or faculty and must be approved by the department. (May be repeated for additional credit with the approval of the department.)

MAT 311. OPERATIONS RESEARCH I. (3) Prerequisites: MAT 120 and 122 with a grade of *C* or better. The first course of a two-semester sequence, including matrix algebra, convex sets, linear programming, queuing, and the theory of games.

MAT 312. OPERATIONS RESEARCH II. (3) Prerequisite: MAT 311. A continuation of MAT 311.

MAT 316. GRAPH THEORY. (3) Prerequisite: junior standing or consent of the department. A study of paths, trees, connectivity, planarity, duality, colorability, enumerability, and vector spaces of graphs. Applications will be made to computer algorithms, switching and coding theory, transportation networks, and Markov processes.

MAT 320. TOPICS IN PROBABILITY AND STATISTICS. (2-3) Prerequisite: consent of the department. Topics in probability and statistics selected so as to supplement regular course offerings in this area of mathematics. Topics may be proposed by students and/or faculty and must be approved by the department. (May be repeated for additional credit with the approval of the department.)

MAT 322. PROBABILITY AND STATISTICS I. (3) Prerequisite: MAT 241 with a grade of *C* or better. Continuous and discrete sample spaces, continuous and discrete random variables, moments and moment generating function, functions of random variables, some standard distributions, multivariate variables, laws of large numbers, limit theorems, stochastic processes.

MAT 323. PROBABILITY AND STATISTICS II. (3) Prerequisite: MAT 322. Estimation, bias, consistency, efficiency, method of moments, maximum likelihood estimates, sufficient statistics, testing hypothesis, simple hypothesis, most powerful test, composite hypothesis, the power function, uniformly most powerful test, sequential tests, and sequential likelihood ratio test, some one sample problem, the classical chi-square test, the Kolmogorov-Smirnov test.

MAT 340. TOPICS IN ANALYSIS. (2-3) Prerequisite: consent of the department. Topics in analysis selected so as to supplement regular course offerings in this area of mathematics. Topics may be proposed by students and/or faculty and must be approved by the department. (May be repeated for additional credit with the approval of the department.)

MAT 341. ADVANCED CALCULUS OF ONE VARIABLE. (3) Prerequisites: MAT 241 and junior standing. Least upper bound principle; sequences; sequences of functions; topology of the real line; continuity and uniform continuity of functions; differential calculus; Riemann integration.

MAT 346. INTRODUCTION TO COMPLEX ANALYSIS. (3) Prerequisite: MAT 241 with a grade of *C* or better. Analytic function theory; complex integration; sequences; series; residue calculus and conformal mapping.

MAT 350. TOPICS IN MATHEMATICS. (2-3 semester hours credit. May be repeated for additional credit with the approval of the department.) Prerequisite: consent of the department. Topics chosen from such fields as set theory, linear algebra, geometry and probability. This course is designed to serve particular needs not served by other departmental offerings.

MAT 360. TOPICS IN ALGEBRA. (2-3) Prerequisite: consent of the department. Topics in algebra selected so as to supplement regular course offerings in this area of mathematics. Topics may be proposed by students and/or faculty and must be approved by the department. (May be repeated for additional credit with the approval of the department.)

MAT 363. MODERN ALGEBRA I. (3) Prerequisite: MAT 263 or consent of the department. The first course of a two-semester sequence covering Groups, Rings, Fields extensions, roots of polynomials and the rudiments of Galois Theory.

MAT 364. MODERN ALGEBRA II. (3) Prerequisite: MAT 363. A continuation of MAT 363. Fields, vector spaces, linear transformations and canonical forms.

MAT 366. COMBINATORIAL MATHEMATICS. (3) Prerequisite: MAT 241. The theory and application of the following enumerative techniques will be emphasized: permutations of distinct and nondistinct objects, generating functions for combinations, enumerators for permutations, recurrence relations, inclusion-exclusion principle, derangements, permutation groups, equivalence classes of functions and Polya's theory of counting.

MAT 370. TOPICS IN APPLIED MATHEMATICS. (2-3) Prerequisite: consent of the department. Topics in applied mathematics selected so as to supplement regular course offerings in this area of mathematics. Topics may be proposed by students and/or faculty

and must be approved by the department. (May be repeated for additional credit with the approval of the department.)

MAT 371. APPLIED MATHEMATICS I. (3) Prerequisite: MAT 271 and 241 with grades of *C* or better. Boundary value problems, separation of variables, Fourier series and Fourier transforms, orthogonal functions.

MAT 372. APPLIED MATHEMATICS II. (3) Prerequisites: MAT 371 with a grade of *C* or better. A continuation of MAT 371.

MAT 376. NUMERICAL ANALYSIS. (3) Prerequisites: CSC 100, MAT 241 and 271. A treatment of the numerical solution of initial value and boundary value problems in ordinary differential equations. An introduction to the numerical solution of partial differential equations. Direct and iterative methods of solving systems of equations will be developed. Selected problems will be programmed for computer solution.

MAT 380. TOPICS IN GEOMETRY-TOPOLOGY. (2-3) Prerequisite: consent of the department. Topics in geometry and/or topology selected so as to supplement regular course offerings in this area of mathematics. Topics may be proposed by students and/or faculty and must be approved by the department. (May be repeated for additional credit with the approval of the department.)

MAT 381. FUNDAMENTAL CONCEPTS OF GEOMETRY. (3) Prerequisites: MAT 264 and consent of the department. Foundations of geometry, affine geometry, comparison of Euclidean and non-Euclidean geometries.

MAT 383. INTUITIVE TOPOLOGY. (3) Prerequisite: MAT 241. Introduction to combinatorial topology; topology of E^n; winding number and applications; homotopies and the fundamental group.

MAT 391. SEMINAR. (1-6) Prerequisite: consent of the department. Readings, study, and discussion designed to develop the student's ability to study independently and to present his results properly.

MAT 392. SEMINAR. (1-6) Prerequisite: consent of the department. A continuation of MAT 391.

MAT 409. HISTORY OF MATHEMATICAL THOUGHT. (3) Prerequisite: consent of the department. A study of the development of mathematics in its historical setting from the earliest beginnings to modern times.

MAT 443. ANALYSIS I. (3) Prerequisite: MAT 341 with a grade of *C* or better or consent of the department. An introduction to metric spaces, including properties of subsets, continuity of functions, pointwise and uniform convergence of functions.

MAT 444. ANALYSIS II. Prerequisite: MAT 443. An introduction to Lebesgue integration and measure theory, starting with a construction of measure for closed and bounded intervals of R and extending to an axiomatic treatment of a general measure on abstract spaces.

MAT 450. SELECTED TOPICS IN MATHEMATICS. (2-3) Prerequisite: consent of the department. Topics chosen from such fields as topology, differential geometry, complex analysis, applied mathematics, or modern algebra. May be repeated for credit with the approval of the department.

MAT 481. INTRODUCTION TO TOPOLOGY. (3) Prerequisite: MAT 383 or 341. Topics from set theory and point set topology such as cardinality, order, topological spaces, metric spaces, separation axiom, compactness and connectedness.

MAT 491. SEMINAR. (1-6) Prerequisite: consent of the department. Individual investigation and appropriate exposition of the results.

MAT 492. SEMINAR. (1-6) Prerequisite: consent of the department. A continuation of MAT 491.

MAT 503. ARITHMETIC IN THE SCHOOL. (3) Prerequisite: MAT 101 or equivalent. A study of the number systems with emphasis placed upon the basic concepts and meanings, properties of addition, multiplication, inverses, systems of numeration, and number line appropriate for each grade. (Does not count toward a major in mathematics. Open only to transfer students who have completed six semester hours of mathematics at another university.)

MAT 522. STATISTICAL TECHNIQUES. (3) Prerequisite: consent of the department. (Credit toward mathematics major given only to teacher education students.) Probability models, random variables, large sample statistics, inferential statistics. (Credit toward mathematics major not given for both MAT 522 and MAT 322.)

The Honors Program in Mathematics

The overall purpose of this program is to stimulate the imagination of the student by encouraging independent study and by freeing him to a certain extent from the more structured program which leads to a B.A. or B.S. in Mathematics. The program in honors will be kept as flexible as possible to allow students with different interests and abilities to benefit from it.

Any student may request entrance into the honors program at any time. A student in any one of the honors courses shall receive a grade of *Pass Honors, Pass,* or *No Credit.* The minimum required to obtain Honors in Mathematics is participation in two semesters of

the Senior Honors Tutorial with a grade of *Pass Honors*, completion of a thesis and examination of the candidate by the Honors Committee of the Department of Mathematics upon his honors work.

MAT 190 H. FRESHMAN HONORS SEMINAR. (2) Prerequisite: consent of the department. An introduction to independent study.

MAT 290 H. SOPHOMORE HONORS SEMINAR. (2) Prerequisite: consent of the department. Further independent study.

MAT 390. H. JUNIOR HONORS SEMINAR. (2) Prerequisite: consent of the department. (May be repeated once for additional credit with approval of the department.)

MAT 490. H. SENIOR HONORS TUTORIAL. (3) Prerequisite: consent of the department. Individual tutorials in which the student will pursue independent study and research in any area of mathematics under the direction of one or more faculty members. The project of the student will be planned to culminate in a research paper of original or expository nature.

OPTION IN COMPUTER SCIENCE

The major for the B.A. degree with an option in Computer Science consists of a minimum of 17 hours of mathematics and a minimum of 27 additional hours in computer science or related mathematics courses. Of the latter, at least 12 hours must be in courses numbered 300 or above and must include a three-hour Senior Project (CSC 450). A quality point average of 2.0 or better is also required. The program of courses presented for the major must be approved by the department.

The major for the B.S. degree with an option in Computer Science consists of a minimum of 20 hours of mathematics and a minimum of 36 additional hours in computer science or related mathematics courses. Of the latter, at least 18 hours must be in courses numbered 300 or above and must include a six-hour Senior Project (CSC 450 and 451). A quality point average of 2.0 or better is also required. The program of courses presented for the major must be approved by the department.

An elective minor is required for both the B.A. and the B.S. and consists of at least 15 hours of courses other than computer science courses; the minor program must also be approved by the department.

CURRICULUM OUTLINE FOR THE B.A. OPTION IN COMPUTER SCIENCE

FRESHMAN YEAR

Mathematics 141	4	Mathematics 142	4
CSC 100	3	CSC 211*	3
English 101	3	English 102	3
Science	4	Science	4
	14		14

SOPHOMORE YEAR

Mathematics 264	3	Mathematics Core	3
CSC 240	3	CSC 2xx	3
Social Science	3	Social Science	3
Humanities	3	Humanities	3
Minor	3	Minor	3
	15		15

JUNIOR YEAR

Mathematics Core	3	CSC 343/361/390	3
CSC 341	3	Minor	3
Minor	3	Electives	10
Electives	7		
	16		16

SENIOR YEAR

CSC 2xx	3	CSC 343/361/390	3
CSC 450	3	Elective	3
Minor	3	Minor	3
Electives	6	Electives	6
	15		15

CURRICULUM OUTLINE FOR THE B.S. OPTION IN COMPUTER SCIENCE

FRESHMAN YEAR

Mathematics 141	4	Mathematics 142	4
CSC 100	3	CSC 211*	3
English 101	3	English 102	3
Science	4	CSC 11x	1
		Science	4
	14		15

**May select any 2xx course if proficient in two higher level languages.*

SOPHOMORE YEAR

Mathematics 264	3	Mathematics Core	3
CSC 240	3	CSC 2xx	3
CSC 2xx	3	CSC 2xx	3
Humanities	3	Humanities	3
Minor	3	Minor	3
	15		15

JUNIOR YEAR

Mathematics Core	3	Mathematics Core	3
Elective	3	CSC 343/361	3
CSC 341	3	Social Science	3
Social Science	3	Minor	3
Minor	3	Electives	4
	15		16

SENIOR YEAR

CSC 3xx/4xx	3	CSC 361/343	3
CSC 450	3	CSC 451	3
Minor	3	Minor	3
Electives	6	Electives	6
	15		15

**May select any 2xx course, if proficient in two higher level languages.*

COURSE DESCRIPTIONS

COMPUTER SCIENCE

CSC 100. ALGORITHMIC LANGUAGES I. (3) Prerequisite or corequisite: MAT 101 or 103. An introduction to digital computing techniques through the study of FORTRAN IV. Various numerical and non-numerical algorithms will be studied, flowcharted, programmed and documented. Concepts such as computer hardware, computer application areas, etc. will be introduced when appropriate. Four Classroom hours per week. Cannot be taken for credit if CSC 101 is taken for credit.

CSC 101. INTRODUCTION TO COMPUTER CONCEPTS. (3) Prerequisite or corequisite: MAT 101 or 103. Covers the development of the digital computer and its applications. Specific topics include: flow-charting, data representation, card readers, printers, disks, tapes, central processing units, batch processing, time-sharing, recent hardware and software developments and an introduction to programming languages. Cannot be taken for credit if CSC 100 is taken for credit.

CSC 110. FORTRAN PROGRAMMING. (1) Prerequisite CSC 101 or consent of department. Various numerical and non-numerical algorithms studied, flowcharted, programmed in FORTRAN IV and computer tested. One lecture and one lab hour per week. Cannot be taken for credit if CSC 100 is taken for credit.

CSC 111. COBOL PROGRAMMING. (1) Prerequisite: CSC 100 or CSC 101 or consent of the department. Various numerical and non-numerical algorithms studied, flowcharted, programmed in COBOL and computer tested. One lecture and one lab hour per week.

CSC 112. ALGOL PROGRAMMING. (1) Prerequisite: CSC 100 or CSC 101 or consent of the department. Various numerical and non-numerical algorithms studied, flowcharted, programmed in ALGOL and computer tested. One lecture and one lab hour per week.

CSC 211. COBOL AND FILE STRUCTURES. (3) Prerequisite: CSC 100 or equivalent. A study of COBOL and its use in file manipulations. Covers concepts of field, record, block, sequential access, random access, sorting, merging, updating, etc. Both business and non-business uses of file systems will be derived and machine tested.

CSC 212. A COMPARATIVE STUDY OF PROGRAMMING LANGUAGES. (3) Prerequisite: CSC 100 and knowledge of at least two higher level computer languages. Numeric and non-numeric algorithms in the procedural languages, COBOL, ALGOL, etc.; discussion and comparison of the relative strengths and weaknesses of the various representative programming languages and appropriate areas of application.

CSC 223. INTRODUCTION TO NUMERICAL METHODS. (3) Prerequisite: CSC 100 or CSC 110 or CSC 112 and MAT 142. Solutions of equations; interpolation and approximations; numerical differentiation and integration; and numerical solution of initial value problems in differential equations. Selected algorithms will be programmed for the digital computer.

CSC 240. ASSEMBLY LANGUAGE, MACHINES, SYSTEMS. (3) Prerequisite: CSC 100 or equivalent. Computer structure, addressing techniques, symbolic coding, macros, internal representations and assembly systems.

CSC 241. SYSTEMS PROGRAMMING. (3) A continuation of CSC 240. Program segmentation and linkage, loaders, reentrant coding, interrupts and traps, resource allocation, pushdown stores, and construction of assemblers and input/output routines.

CSC 260. DATA BASE DESIGN AND IMPLEMENTATION. (3) Prerequisite: CSC 100 and knowledge of at least two computer languages. An introduction to the design of large data files, the implementation of these files in an appropriate programming language and their applications. Emphasis will be on advanced programming techniques with participation in the actual construction of a file system.

CSC 273. LOGIC AND ALGORITHMS. (3) Prerequisite: sophomore standing. Set algebra; elements of the theory of graphs; Boolean Algebra; propositional logic; and Markov Algorithms and Turing machines.

CSC 341. COMPUTER ORGANIZATION. (3) Prerequisite: junior standing, at least six hrs. of CSC and consent of the department. Basic digital components; data representation and transfer; digital storage and accessing; control functions; input/output facilities; machine description, organization, simulation. Survey of various computer architectures.

CSC 343. ADVANCED SYSTEMS PROGRAMMING. (3) Prerequisite: CSC 341. Batch processing, multiprogramming, multiprocessing and real-time systems. Structure of operating systems, parallel processing of input/output and interrupt handling, information sharing, virtual memory, and virtual machines.

CSC 361. INFORMATION STRUCTURES. (3) Prerequisite: CSC 240 and junior standing. Description of a data base and its structure; concepts of records, files, trees, and lists; sorting, searching and merging of information files, referencing and cross referencing of files.

CSC 390. SEMINAR. (1-6) Prerequisite: junior standing plus consent of the department.

CSC 391. SEMINAR. (1-6) Prerequisite: junior standing plus consent of the department. A continuation of CSC 390.

CSC 450. SENIOR PROJECT. (3) Prerequisite: senior standing or consent of the department. An individual research project under the direction of a faculty member. The project shall have the teaching, theory or application of computer sciences as its main emphasis and shall be of benefit to the department, university or urban community. The project shall be approved by a departmental committee before it is initiated and the results reviewed by the committee before a grade is assigned.

CSC 451. SENIOR PROJECT. (3) Prerequisite: CSC 450. A continuation of CSC 450.

DEPARTMENT OF PHYSICS

Acting Chairman: Associate Professor Oberhofer
Professor: Pollak
Associate Professors: Mayes, Vermillion
Assistant Professors: Corwin, Melton
Lecturer: Lipham

A major in physics leading to the B.A. degree consists of a minimum of 120 semester hours which fulfill the general degree requirements of the University. A minimum of 32 semester hours in physics with an average grade of *C* in the major area is required. The

minimum 32 hours must include Physics 221, 222, 231, 241, 251, 252, 291, 491 and at least nine additional hours at the 300/400 level.

A major in physics leading to the B.S. degree consists of a minimum of 120 semester hours which fulfill the general degree requirements of the University. A minimum of 43 semester hours in physics with an average grade of *C* in the major area is required. The minimum 43 hours must include Physics 221, 222, 231, 241, 251, 252, 291, 321, 331, 341, 351, 361 or 371, 491 and at least six additional hours at the 300/400 level to be approved by the department.

For either program a first-year sequence of Physics 101 and 102, or Chemistry 101 and 102 is recommended. Students should note that Mathematics 141, 142, 241, 271 or their equivalents are prerequisites for various required physics courses. Freshmen should arrange their mathematics schedule so as to complete Math 141 before beginning the sophomore year.

COURSE DESCRIPTIONS

PHYSICS

Astronomy

PHY 103. INTRODUCTION TO ASTRONOMY. (3) Historical beginnings of astronomy. Motions of celestial bodies. Introduction to space science. The solar system. Optical and radio astronomy. Structure and evolution of stars. Galaxies, cosmology. Three lecture hours each week. If taken together with 103L, the combination can be counted toward the general degree requirement in natural science.

PHY 103L. INTRODUCTION TO ASTRONOMY LABORATORY. (1) Prerequisite or corequisite: PHY 103. Experimental investigations relating to the acquisition of and interpretation of astronomical data. One three-hour laboratory each week.

Physics

PHY 101. INTRODUCTORY PHYSICS I. (4) Introduction to the fundamental principles of natural phenomena. Topics will be selected from traditional classical subjects (e.g., Newtonian mechanics, electromagnetism) and more recent developments in order to illustrate the logical structure of modern science. Three lecture and three laboratory hours each week.

PHY 102. INTRODUCTORY PHYSICS II. (4) Prerequisite: PHY 101. A continuation of PHY 101. Three lecture and three laboratory hours each week.

PHY 105. BASIC CONCEPTS AND TEACHING METHODS IN PHYSICAL SCIENCE. (4) Intended primarily for students in teacher education. Content, processes and attitude of science are

explored, along with methods for teaching science to children. Topics include basic scientific concepts such as energy, interaction, relativity of motion, scientific model, as well as teaching strategies and their relationship to theories of learning and development, such as Piaget's theory. May not be counted toward the eight hour general degree requirement in natural science. Six laboratory/class hours per week.

PHY 221. DYNAMICS. (3) Prerequisite: MAT 141. Kinematics and dynamics of particles; momentum, work, energy; conservation laws, mechanics of rigid bodies. Three lecture hours a week.

PHY 222. WAVES AND THERMAL PHYSICS. (3) Prerequisites: PHY 221 or ESM 241; MAT 142. Fluid mechanics and elastic properties of matter; oscillations and waves in elastic media; sound; heat and an introduction to thermodynamics and the kinetic theory of gases. Three lecture hours a week.

PHY 231. ELECTRICITY AND MAGNETISM. (3) Prerequisites: PHY 221 or 222; MAT 142. Electric and magnetic fields in free space and in matter; electrostatic potential and capacitance; elementary circuit theory; electromagnetic induction and inductance; introduction to Maxwell's equations. Three lecture hours a week.

PHY 241. INTRODUCTION TO MODERN PHYSICS. (3) Prerequisites: PHY 102 or PHY 231; MAT 120 or MAT 141. An introduction to such topics as the atomic structure of matter, quantum physics, electronic structure of atoms, wave nature of matter, physics of the solid state, nuclear structure, radioactive decay, fission and fusion, and special relativity. Three lecture hours a week.

PHY 251. EXPERIMENTAL PHYSICS I. (1) Corequisite: PHY 221. The first course of a laboratory sequence developing toward open-ended experiments designed to illustrate physical principles, to develop experimental technique and to encourage individual investigation by the student. PHY 251 involves chiefly experiments in classical mechanics. One three-hour laboratory each week.

PHY 252. EXPERIMENTAL PHYSICS II. (2) Prerequisite: PHY 251. Corequisite: PHY 231. Experiments in electricity and magnetism. One three-hour laboratory each week.

PHY 290. SEMINAR I. (0) Films, lectures, demonstrations and reports on recent developments in physics, historical reviews of specific areas, student and faculty projects or research. A term paper or other presentation may be required. Meets once every other week. May be repeated.

PHY 291. SEMINAR II. (1) Prerequisite: PHY 290. Continuation of PHY 290. A term paper or other presentation will be required in most cases. May be repeated for up to two hours of credit.

PHY 311. A.C. CIRCUITS AND ELECTRONICS. (4) Prerequisites: PHY 231 and PHY 252. An introduction to A.C. circuit theory and electronics with an emphasis on the function and behavior of the individual components of an electronic circuit. Two hours of lecture and one three-hour laboratory each week.

PHY 321. CLASSICAL MECHANICS I. (3) Prerequisites: PHY 221; MAT 241 and 271. The first course of a two-semester sequence treating particle dynamics, the motion of systems of particles, rigid body motion, moving coordinate systems, Lagrange's equations, Hamilton's equations and small oscillations. Three lecture hours a week.

PHY 331. ELECTROMAGNETIC THEORY I. (3) Prerequisites: PHY 231; MAT 241 and 271. The first course of a two-semester sequence. Topics considered include electrostatics and magnetostatics in free space and in matter, the motion of charged particles in electric and magnetic fields, capacitance, dielectric theory, field energy, electromagnetic induction and inductance, vector and scalar potentials, magnetic properties of matter, Maxwell's equations, solutions of Maxwell's equations in free space and in matter, propagating electromagnetic waves, and boundary value problems. Three lecture hours a week.

PHY 341. QUANTUM PHYSICS I. (3) Prerequisites: PHY 231 and 241, MAT 241 and 271, or consent of the department. Empirical necessity for quantum physics. Postulates of quantum physics. Analytical study of quantum physics of the atom. Three lecture hours a week.

PHY 345. STATISTICAL PHYSICS. (3) Prerequisite: PHY 231 and 241, or consent of the department. Introduction to the microscopic foundations for macroscopic systems. Kinetic theory and introductory statistical mechanics. Three lecture hours a week.

PHY 351. ADVANCED LABORATORY IN WAVES AND OPTICS. (2) Prerequisites: PHY 252. Selected laboratory work primarily in geometrical optics, physical optics and microwaves. Three hours of laboratory each week.

PHY 361. ADVANCED LABORATORY IN MODERN PHYSICS. (2) Prerequisites: PHY 241 and PHY 252, or PHY 241 and consent of department. Selected laboratory work in such areas as atomic spectra, radioactive decay, and the interaction of radiation with matter. Three hours of laboratory each week.

PHY 371. ADVANCED LABORATORY IN MECHANICS. (2) Prerequisites: PHY 252. Selected laboratory work in the area of classical mechanics. Topics are chosen for their relation to important principles and techniques or for their historical significance. Three hours of laboratory each week.

PHY 395. TOPICS IN PHYSICS. (0-4 semester hours credit. May be repeated with approval of the department.) Prerequisite: consent of the department. Used to comply with requests for special topics which are introductory in nature.

PHY 397. INTERNSHIP IN COMMUNITY EDUCATION AND SERVICE. (3) Prerequisites: junior standing, acceptance into the internship program, and approval by the Physics Department. Co-requisite: SBS 398. A project oriented, service-learning internship with cooperating community organizations. Credit toward departmental requirements in physics will not be granted for this course. May be repeated once with permission of the Physics Department. This course is offered on a pass/no-credit basis.

PHY 411. NUCLEAR PHYSICS. (3) Prerequisites: PHY 231 and 241, and MAT 271. A study of the nucleus, radioactivity, nuclear reactions, fission, fusion, interactions of radiation with matter, and measurement of radiation. Three hours lecture per week.

PHY 421. CLASSICAL MECHANICS II. (3) Prerequisite: PHY 321. Continuation of PHY 321. Three lecture hours a week.

PHY 431. ELECTROMAGNETIC THEORY II. (3) Prerequisite: PHY 331. Continuation of PHY 331. Three lecture hours a week.

PHY 441. QUANTUM PHYSICS II. (3) Prerequisite: PHY 341 Continuation of PHY 341 with selected applications from atomic molecular, solid state and nuclear physics. Three lecture hours a week.

PHY 490. SEMINAR III. (0) Continuation of PHY 290 and 291 May be repeated.

PHY 491. SEMINAR IV. (1) Prerequisite: PHY 490. Continuation of PHY 490. May be repeated for up to two hours of credit.

PHY 495. SELECTED TOPICS IN PHYSICS. (0-4 semester hours credit. May be repeated with approval of the department.) Prerequisite: consent of the department. Used to comply with requests for more advanced special topics.

College of Social and Behavioral Sciences

Dean: Professor Schul

The College of Social and Behavioral Sciences includes the Criminal Justice Program, the Service-Learning Internship Program, the Venture Program and the departments of Geography and Earth Sciences, Political Science, Psychology, and Sociology and Anthropology.

SERVICE-LEARNING INTERNSHIP PROGRAM

Program Coordinator: Assistant Professor Arrington

The service-learning Internship Program in Community Education and Service is designed as an area-wide academic program with credit in the College of Social and Behavioral Sciences.

The following are the overall objectives of the internship program:

—To identify relationships between the student's academic program and the problems and prospects of modern urban communities.

—To enable students to become involved in solving problems of the urban community.

—To provide manpower for governmental and service agencies in local metropolitan communities.

—To encourage youth to consider careers and/or citizen leadership in urban administration and service. To establish a closer relationship between institutions of higher education and the Charlotte area communities by making the resources of the University more accessible to the community and by providing a basis for keeping curriculum, teaching, and research relevant to the needs of the community and society.

Interns will receive six semester hours of academic credit, with grading on a *P/NC* basis, for their completion of the Program in Community Education and Service by enrolling in the following courses in the College of Social and Behavioral Sciences (SBS) at the University of North Carolina at Charlotte:

VENTURE PROGRAM

This program is an experiential learning process which attempts to meet several fundamental needs complementary to the

student's education. It utilizes a wilderness setting and small-group dynamics in order to increase the student's understanding of self, interpersonal relationships and the environment.

COURSE DESCRIPTIONS

SBS 399. VENTURE. (3) A field experience course which utilizes a wilderness setting and small-group dynamics in order to increase the student's understanding of self-interpersonal relationships and the environment. The course is action-oriented with one experience building upon another. The emphasis is on an interdisciplinary approach.

NOTE: The student's major department has the option of recognizing this credit as fulfilling departmental requirements. Evaluation will be on a *Pass/No Credit* basis which does not apply against the four courses allowed on a *Pass/No Credit* option for UNCC students.

For further information concerning this program, contact the Office of the Dean, College of Social and Behavioral Sciences.

CRIMINAL JUSTICE PROGRAM

Director: Assistant Professor Adams
Assistant Professor: Johnson
Lecturer: Memory

Students desiring the academic study of crime, delinquency, and the criminal justice system, a career in the criminal justice field, or preparation for graduate study may select the criminal justice curriculum, leading to a Bachelor of Science degree. A major in criminal justice requires 30 semester hours of criminal justice courses, including CJ 300—General Criminal Justice, CJ 301—Criminal Justice Theory, and CJ 302—Research Methods in Criminal Justice. Criminal justice majors must complete a concentration in Corrections, Criminal Justice Planning and Administration, or Criminal Justice Research and Evaluation. Concentrations require criminal justice courses and courses from other disciplines. Students may satisfy the requirement for a concentration by the completion of an associate degree in a criminal justice area at a community college or technical institute, and six hours of approved 300 or 400 level criminal justice coursework. Twelve hours of criminal justice course work at a community college or technical institute may be counted toward the 30 semester hours of required criminal justice courses.

Criminal justice majors must also complete 15 hours of approved related work in accounting, economics, geography, philosophy, political science, psychology, religion, or sociology.

CRIMINAL JUSTICE

CJ 300. GENERAL CRIMINAL JUSTICE. (3) Prerequisite: junior standing. All components of the criminal justice system are reviewed and their interrelatedness assessed. Empirical description and tests of the various segments of the system are covered. The role of criminal justice practitioners as professionals is discussed.

CJ 301. CRIMINAL JUSTICE THEORY. (3) Prerequisite: junior standing. Some empirical tests of theories and consideration of theory construction are included. This course focuses upon theories of the criminal justice system as a system and gives particular attention to the systemic relationship between its component parts, inputs, conversion processes, outputs and feedbacks.

CJ 302. RESEARCH METHODS IN CRIMINAL JUSTICE. (4) Prerequisite: junior standing, one statistics course or social measurement course and CJ 300 or consent of instructor. The development of research designs, data collection methods and data analysis most relevant to criminal justice are covered. Traditional criminal justice statistics are discussed. Emphasis is placed on sources of criminal justice information and the skills involved in a thorough criminal justice literature review. There is a focus on research problems of particular interest to the criminal justice system and on unique constraints operating on research within that system. Three lecture hours and one laboratory period of two hours a week.

CJ 438. JUVENILE JUSTICE SUBSYSTEMS. (3) Prerequisite: junior standing. The nature, sources and types of laws concerning juveniles are considered. The focus is on legal bases of delinquency and the role of juvenile justice as a subcomponent of the larger criminal justice system. Particular attention will be given the systemic linkages of the juvenile justice system and the problems of interfacing the juvenile justice system with the larger criminal justice system.

CJ 439. CRIMINAL JUSTICE AND THE LAW. (3) Prerequisite: junior standing. This course examines the nature, origins and objectives of the criminal sanction as it is developed and applied by the criminal justice system. It places particular emphasis upon the roles played by statutory and procedural law in the area of law enforcement, prosecution and corrections.

CJ 449. ETHICS AND THE CRIMINAL JUSTICE SYSTEM. (3) Prerequisite: junior standing. The course focuses on ethical issues related to the administration of justice.

CJ 459. APPLIED CRIMINAL JUSTICE RESEARCH. (3) Prerequisite: one research methods course and junior standing. Significant research studies of criminal justice programs, policies and agencies are evaluated, with special attention to methodological

matters. Emphasis is placed on the pragmatic implications of the research findings.

CJ 469. CRIMINAL JUSTICE PLANNING AND ADMINISTRATION. (3) Prerequisite: junior standing and one planning or administration course. Individual and group studies in the dynamics of criminal justice administration and planning are covered, emphasizing the social and psychological aspects of organization and management. Policy formulation, personnel supervision and planning in a criminal justice agency are discussed. Special problems of local, state, regional and national criminal justice planning agencies are considered.

CJ 478. COMMUNITY CORRECTIONS SUBSYSTEMS. (3) Prerequisite: junior standing. The structure, functions and effectiveness of community corrections are considered. Techniques in clinical criminal justice and the impact of community corrections on other elements of the criminal justice system are discussed.

CJ 479. INSTITUTIONAL CORRECTIONS SUBSYSTEMS. (3) Prerequisite: junior standing. The structure, functions and effectiveness of institutional corrections are considered. Techniques in clinical criminal justice and the impact of institutional corrections on other elements of the criminal justice system are discussed.

CJ 488. LAW ENFORCEMENT SUBSYSTEMS. (3) Prerequisite junior standing. The organization and operation of law enforcement and security agencies are considered. Particular attention is given to the relationship between law enforcement subsystems and other components of our system of criminal justice. The evolving role of law enforcement and its position in theories of social control are discussed.

CJ 489. LAW ENFORCEMENT AND COMMUNITY RELATIONS. (3) Prerequisite: junior standing. Factors contributing to cooperation or friction between law enforcement personnel and the community, with an emphasis on minority groups, social pressures and cultural problems, are discussed.

CJ 490. CRIMINAL JUSTICE PRACTICUM. (1-6) Prerequisite consent of the instructor and the criminal justice agency, and CJ 300. Supervised exposure to a criminal justice problem of special interest to the student. May be repeated for credit up to a maximum of six total hours.

CJ 495. DIRECTED INDIVIDUAL STUDY. (1-4) Prerequisite junior standing, consent of the director, and one 300-level CJ course. Supervised investigation of a criminal justice problem of special interest to the student. May be repeated for credit.

CJ 499. TOPICS IN CRIMINAL JUSTICE. (1-6) Prerequisite: consent of the program. Examination of specialized criminal justice topics selected by students and faculty. May be repeated for credit

DEPARTMENT OF GEOGRAPHY AND EARTH SCIENCES

Chairman: Professor Stuart
Professors: Clay, Schul
Associate Professors: Lord, Nunnally, Orr
Assistant Professors: Bedford, Catau, Hopkins, Ingalls, Lemmon, Walcott
Instructor: Kutsche
Lecturers: Simpson, Wilson
Lecturer (part-time): Olsen

The department offers two majors, one in Geography, the other in Earth Science.

Geography Major

A major in Geography leading to the B.A. Degree consists of 28 hours of Geography and Earth Sciences and will include Geography 102, 105, 202 and 203 and Earth Science 101. Except for required courses, all work offered for the major must be in courses numbered 300 or above. Majors are expected to take additional work in computer science, economics, history, political science, sociology and statistics or other related areas. Any student who wishes to pursue graduate study in Geography or to be recommended for non-teaching professional employment in the field should expect to take Geography 450.

Students who are working toward teacher certification may elect to take a modified program under which Geography 202 and 203 are not required and may be substituted for by any other six hours of 300 or higher numbered course work in Geography (but not in Earth Sciences).

Earth Science Major

A major in Earth Science leading to the B.A. Degree consists of a minimum of 35 semester hours and will include Earth Science 101, 102 and 340. The remaining 24 hours will be selected from other Earth Science courses and/or from an approved list of related Geography courses. The selection of other courses for the major and in related work is to be made by the student in consultation with the faculty adviser, based primarily on the student's interest in one of the four program options:

1) General Earth Science—a liberal arts option for the non-career oriented student.
2) Preparation for Graduate Study—students interested in advanced work in geology, meteorology, oceanography or

physical geography should complete the appropriate selection of courses in the major plus at least mathematics through calculus, one year of physics and one year of chemistry.

(3) Teacher Certification—students who plan to teach earth science should take a broad selection of courses within the major as well as meet established teacher certification requirements.

(4) Applied Earth Sciences—students interested in earth sciences as they apply to human problems can develop plans of study which range from broad environmental planning considerations to applications of earth science technologies. Related work should be taken in mathematics, the natural sciences, engineering and the planning aspects of the social sciences.

COURSE DESCRIPTIONS

GEOGRAPHY

GGY 102. WORLD REGIONAL GEOGRAPHY. (3) A world regional study which emphasizes the distinctly human responses of man to various geographic situations throughout the world. The nature and development of cultural regions will be studied.

GGY 105. THE LOCATION OF HUMAN ACTIVITY. (3) An examination of factors which account for the locational characteristics of economic and other human activities. The locational decision-making process is examined as a means of understanding human spatial behavior.

GGY 202. ELEMENTARY CARTOGRAPHY. (3) Emphasis to be focused on tools of map making, map design and construction and the interpretation of aerial photographs and topographic maps. One lecture hour and two laboratory periods of two hours a week.

GGY 203. INTRODUCTION TO GEOGRAPHIC RESEARCH. (3) An examination of research design and resources in geographic study including emphasis on spatial models and other quantitative tools applicable to geographic research.

GGY 301. GEOGRAPHY OF LATIN AMERICA. (3) A regional study of the basic human and physical differences from place to place which affect economic, social and political conditions of the Latin American countries.

GGY 302. GEOGRAPHY OF POLAR REGIONS. (3) A study of the Arctic and Antarctic regions with particular emphasis on the history of exploration, the physical environment and political significance.

GGY 303. GEOGRAPHY OF ANGLO-AMERICA. (3) The geographic structure of the United States and Canada with emphasis on both the physical environment and the patterns of human activities.

GGY 304. GEOGRAPHY OF NORTH CAROLINA. (3) A study of physical, social and economic patterns in North Carolina.

GGY 305. GEOGRAPHY OF EUROPE. (3) A regional study of geographic conditions and their relationship to economic, social and political problems of Europe.

GGY 308. GEOGRAPHY OF EAST ASIA. (3) A regional study emphasizing the relationships that exist between the physical environment and the cultural patterns in geographic regions of China, Korea, Japan and the nations of Southeast Asia.

GGY 309. GEOGRAPHY OF SOUTH AND SOUTHWEST ASIA. (3) A regional study emphasizing the relationships that exist between the physical environment and the cultural patterns in geographic regions of the Indian subcontinent and the Arabian peninsula.

GGY 311. POLITICAL GEOGRAPHY. (3) A study of the concepts of political geography as developed through topical studies of political phenomena as related to geographical features. Contemporary problems in international affairs will be considered.

GGY 312. POPULATION GEOGRAPHY. (3) A study of spatial variations in the size, composition, distribution and growth of population. The causes and implications of geographic differences in fertility, mortality and especially migration are discussed.

GGY 313. MANUFACTURING GEOGRAPHY. (3) A study of factors relating to the nature, locations and development of manufacturing industries. Emphasis upon classification of manufacturers, principal areas of manufacturing and the role of manufacturing in regional development.

GGY 314. RESOURCE PLANNING. (3) A study of the resources of the world, especially as they pertain to population, their use and misuse and present conservational practices as they relate to planning for future resource adequacy.

GGY 315. THE REGION AND PLANNING. (3) The regional concept and its application to urban and regional planning. Emphasis to be upon the techniques used in regional analysis.

GGY 316. GEOGRAPHY OF TERTIARY ACTIVITY. (3) A study of spatial attributes of retail and wholesale activities, service facilities and financial establishments. Emphasis upon location research and delineation of trade and service areas.

GGY 317. THE GEOGRAPHY OF TRANSPORTATION SYSTEMS. (3) The study of those geographical and human factors which affect the movement of goods and people from place to place. Emphasis will be placed on transportation routes and networks, commodity flow patterns and the locational implications of freight rates.

GGY 318. GEOGRAPHY OF PRIMARY ACTIVITIES. (3) A study of the functional and spatial attributes of primary economic activities, including agriculture, fossil fuels and other minerals, forestry and fisheries. Emphasis upon a models approach.

GGY 319. GEOGRAPHY OF INDUSTRIAL ACTIVITY. (3) The analytical study of the principles that affect the geographic distribution of manufacturing activity. Emphasis will be on theory, model building and the practical application of theory to geographic research. Also covered will be the role of industrial activity in regional development and planning. Although not required, students should generally plan to take GGY 313 first.

GGY 320. THE CITY AND ITS REGION. (3) A study of the regional system of cities in terms of their size, spacing, historical evolution, functional relationships and future prospects.

GGY 321. INTERNAL STRUCTURE OF THE CITY. (3) An integrative study of the spatial structure of cities with emphasis on land use patterns and models, transportation systems, residential concentrations, commercial activities and manufacturing zones.

GGY 323. BEHAVIORAL GEOGRAPHY. (3) A study of various information processing and decision making models that affect locational choices. The primary emphasis is on the application of these models to the analysis of environmental preferences, human behavior in natural hazard zones, urban social and economic locational behavior and landuse planning.

GGY 331. AIR PHOTO INTERPRETATION. (3) The examination and interpretation of aerial photographs with the aid of stereoscopes. Emphasis is to be placed on the identification of physical and cultural features and their patterns. One lecture hour and two laboratory periods of two hours a week.

GGY 332. ADVANCED CARTOGRAPHY. (3) Prerequisite: GGY 202. Preparation of maps, figures and charts at a professional level of competence. Techniques to be emphasized include scribing and various related photographic processes in addition to conventional pen and ink methods. Two laboratories of three hours each week.

GGY 350. ADVANCED GEOGRAPHIC ANALYSIS. (3) Prerequisite: GGY 203 or consent of instructor. An examination of advanced analytical methods in geography. The course will include multi-variate analysis and complex spatial models. Course will include computer usage.

GGY 402. SELECTED TOPICS IN GEOGRAPHY. (3) Prerequisite: consent of instructor. An intensive study of topics in geography. Topics will be offered from such areas as urban, manufacturing, tertiary activity, transportation, primary activity and political geography. Topics will vary from semester to semester. May be repeated for credit.

GGY 450. INDIVIDUAL STUDY IN GEOGRAPHY. (1-4) Permission of department must be obtained and credit hours established in advance. May be repeated for credit. Tutorial study of special research problems.

EARTH SCIENCE

ES 101. EARTH SCIENCE-GEOGRAPHY. (4) A study of basic geographical principles and processes in earth science; the earth—its position and motions; the grid system; weather; climate; the waters; soils; and vegetation. Three lecture hours and one period in the audio-visual-tutorial lab every week.

ES 102. EARTH SCIENCE-GEOLOGY. (4) A study of the basic geological principles and processes in earth science; the earth as a planet; treatment of physical processes shaping the earth; earth materials and landforms. Three lecture hours and one laboratory period of two hours a week.

ES 330. BIOGRAPHY. (3) An introduction to the biosphere with focus on structure, processes and patterns. Three hours per week with occasional field work integrated into course.

ES 335. SOIL SCIENCE. (3) Application of soil processes to management and use of soils. Three hours per week with occasional field work integrated into course.

ES 340. FIELD METHODS IN THE EARTH SCIENCES. (3) Prerequisite: ES 101 and 102 or consent of instructor. Introduction to field techniques used in geology, geomorphology, hydrology, soil science and vegetation surveys. Two hours of lecture and one three-hour lab per week.

ES 341. NATURAL ENVIRONMENTS OF NORTH AMERICA. (3) A study of the physiographic regions of the United States, the genesis and pattern of the major landforms included within each, their distinctive characteristics and their cartographic interpretation.

ES 342. METEOROLOGY. (3) An introduction to atmospheric phenomena, weather producing processes, weather forecasting and weather effects upon man's activities.

ES 343. WEATHER ANALYSIS LABORATORY. (1) Pre-or corequisite: ES 342 or consent of instructor. An introduction to weather

observation and techniques of weather forecasting. One two-hour lab per week.

ES 345. MICROCLIMATE: URBAN ENVIRONMENTS. (3) ES 101 or introductory physics are recommended. Principles of micrometerology/climatology using examples from urbanized areas. Analysis of local-scale climates and man-made modification of these environments.

ES 346. CLIMATOLOGICAL DATA ANALYSIS. (1) Prerequisite: GGY 203 or Statistics. Pre-or corequisites: ES 342 or ES 345 or ES 347 or consent of instructor. Methods of acquiring and analyzing climatological data in various types of applied problems. One two-hour lab per week.

ES 347. GLOBAL CLIMATES. (3) The global pattern of climates and climate producing factors. Climatic effects in relation to man and man's effect upon climate.

ES 350. MINERALS AND ROCKS. (4) Formation processes, composition and identification of rocks and minerals in the earth's crust with important abundance or special use. Three lecture and one lab two hours per week.

ES 353. SEDIMENTARY PROCESSES. (3) Prerequisite: ES 102 or consent of instructor. Origin, dispersion, deposition, diagenesis, classification and general distribution of sedimentary materials; principles of physical stratigraphy and biostratigraphy. Three hours per week with occasional field work integrated into course.

ES 354. GEOLOGIC HISTORY OF THE APPALACHIANS. (4) Prerequisites: ES 102 and 350, or consent of instructor. An examination of the history of the Appalachian system (including Coastal Plain) emphasizing methods of interpreting the geologic record. Topics include classification and measurement of geologic time; spatial and temporal relations of rocks; geologic structures and fossils in the Appalachians; and evolution of the Appalachians in terms of plate tectonics.

ES 355. GEOLOGICAL MAPPING AND INTERPRETATION. (4) A field-oriented study of the principles of structural geology and lithology. Prerequisite: ES 102 and ES 350. Two lecture hours and four laboratory hours per week.

ES 361. LANDSCAPE EVOLUTION. (4) Prerequisite: ES 102. Treatment of the processes shaping the earth's surface, genesis of landforms, and the theories related to landform development. Three lecture hours and one laboratory period of two hours a week.

ES 365. PHYSICAL AND GEOLOGICAL OCEANOGRAPHY. (3) A study of the ocean environment emphasizing the ocean's place in planet Earth's energy exchange systems. Emphasis also on the ocean as a complex solution, topography of the ocean floor, sedimentation and coastline morphology.

ES 367. HYDROLOGIC PROCESSES. (3) Prerequisite: ES 101 or 102, or equivalent. An introduction to the atmospheric, soils and geologic aspects of surface and ground water processes. Three hours per week with occasional field work integrated into course.

ES 370. INTRODUCTION TO ENVIRONMENTAL PROBLEMS. (3) Prerequisite: consent of the instructor. The study of major problems in the human environment.

ES 371. ENVIRONMENTAL QUALITY MANAGEMENT. (3) A study of concepts and techniques used in the design and implementation of air and water resource management plans.

ES 372. ENVIRONMENTAL IMPACT ANALYSIS. (3) Prerequisite: 15 hours of earth sciences, including ES 340. A survey of environmental impact requirements and associated procedures, guidelines and methods of assessing physical environmental impacts. Three hours per week of combined lecture and supervised field work.

ES 380. ENVIRONMENTAL EARTH SCIENCES. (3) Integration of cultural and physical aspects of environmental degradation. Introduction to environmental aspects of earth materials, natural earth hazards, conservation and recycling of resources and environmental planning.

ES 385. ENVIRONMENTAL GEOCHEMISTRY. (4) Prerequisites: ES 102 and Chem 101, Chem 102, or consent of instructor. Geochemical factors relating to man and the environment including chemistry of the biosphere, lithosphere and atmosphere, geochemical cycles and the chemical effect of man on his ecosystem. Three lecture hours and one two-hour lab per week.

ES 404. CONCEPT DEVELOPMENT IN EARTH SCIENCE. (3) Prerequisite: consent of the instructor. Examination of major concepts in earth science with emphasis on implementing their instruction at the primary and secondary school levels. One lecture hour and two laboratory periods of two hours each a week.

ES 405. SELECTED TOPICS IN EARTH SCIENCES. (3) Prerequisite: consent of instructor. An in-depth treatment of specific topics selected from one of the fields of the earth sciences. To provide increased specialization in various fields beyond the 300-level course. Topics will vary from semester to semester. May be repeated for credit.

ES 460. INDIVIDUAL STUDY IN EARTH SCIENCES. (1-4) Permission of the department must be obtained and credit hours established in advance. Tutorial study or special research problems. May be repeated for credit.

DEPARTMENT OF POLITICAL SCIENCE

Chairman: Professor Lyons
Professor: Jamgotch
Associate Professors: Cox, Backman, Bryant, Fleitas, McCoy
Assistant Professors: Arrington, Brenner, Dorin, Kyle, Mundt, Panyan, Stowe
Instructor: Heilig
Lecturer: Thompson
Lecturer (part-time): Brennan, Farquhar

A major in Political Science for the B.A. degree requires: (1) 30 semester hours of political science to include PSC 490 (Scope of Political Science) and one of the following three courses: PSC 390 (Political Measurement), PSC 391 (Research Methods) and/or PSC 392 (Survey Research); and (2) 18 semeseter hours of course work in no more than two of the following disciplines: anthropology, business, black studies, computer science, economics, geography, history, mathematics, philosophy, psychology and sociology. All 18 hours may be taken in a single discipline—for example, sociology or history; or, any other combination may be used, such as 12 hours in sociology and six hours in psychology. With an adviser's approval, a student may elect to do 18 hours of related work on an interdisciplinary topic.

Students may opt to receive the Bachelor of Arts in political science with a concentration in international studies. A concentration in international studies shall include at least 18 hours (of a total of 30) in courses listed in the *Catalog* under international relations, comparative politics and area studies. Majors are encouraged to diversify their course work in international studies by taking 24 hours in at least three of the following fields: anthropology, comparative literature, comparative sociology, comparative religions, geography, international business, economics and trade, modern foreign language and 19th and 20th century history. (The fulfillment of this requirement satisfies the department's general related work requirement.)

The offerings including introductory courses are divided into six major areas as follows:

1. American Politics: Political Science 110, 301, 303, 305, 307, 309, 311, 312, 313, 314, 315, 316, 317, 318, 319, 321, 322, 323.

2. Comparative Politics: Political Science 130, 331, 332, 335, 336, 337, 341, 343, 345, 346, 347, 348, 349.

3. International Relations: Political Science 150, 353, 357, 359, 360, 361, 362, 365, 469.

4. Political Theory: Political Science 371, 373, 374, 375.

5. Public Administration: Political Science 383, 384, 386, 387.

6. Scope and Methods of Political Science: Political Science 390, 391, 392, 490.

COURSE DESCRIPTIONS

POLITICAL SCIENCE

PSC 110. INTRODUCTION TO AMERICAN POLITICS. (3) Role of the President, Congress, Supreme Court and national administrative agencies in the American political system. Relationship between the American people and their political institutions with emphasis upon political culture, the electoral process, interest groups, political communication and the international commitments of the United States.

PSC 130. INTRODUCTION TO COMPARATIVE POLITICS. (3) Political comparisons among nations. Diverse geographical emphases, including some of the following: Latin America, the Atlantic communities of the West, Central and Eastern Europe, the Middle East, Africa, Central Asia, East Asia and Southeast Asia.

PSC 150. INTRODUCTION TO INTERNATIONAL POLITICS. (3) Analysis of politics among nations: material and psychological sources of national power, the role of law, force, and diplomacy in world politics, problems of peace and disarmament, and international organization.

PSC 150L. INTRODUCTION TO INTERNATIONAL POLITICS LABORATORY. (1) (Simulation Section). The laboratory experience will address itself to the simulation of a complex phenomenon known as "international behavior." One laboratory period of two hours per week.

PSC 300. SELECTED TOPICS IN POLITICAL SCIENCE (1-4) An intensive study of a political topic. The particular topic investigated may vary from semester to semester, and a student may take more than one course under this number.

AMERICAN POLITICS

PSC 301. POLITICAL SOCIALIZATION. (3) The study of the processes by which the political culture of the society is transmitted, formally and informally, to individual members. The course examines the learning process, the agents of socialization, the content of the learning and the consequences of political socialization for the functioning of the political system.

PSC 303. PUBLIC OPINION AND THE MASS MEDIA. (3) The nature and influence of public opinion and the effects of the news media on public opinion and political behavior. The course emphasizes research on the development and content of public opinion and social psychological studies on the process of opinion change.

PSC 305. ELECTORAL BEHAVIOR. (3) An examination of the psychological, sociological and political variables that influence voting behavior and that affect electoral stability and change. The course emphasizes studies derived from survey research.

PSC 307. ETHNIC POLITICS. (3) The role of racial, religious and nationality groups in American politics.

PSC 309. POLITICAL PARTIES AND INTEREST GROUPS. (3) Analysis of the role played by political parties and interest groups in the American political system.

PSC 311. THE CONGRESS. (3) Analysis of the role of the Congress in the American political system and its relationships with the other branches of government. The course includes study of the recruitment and socialization of congressmen, the committee system and roll call analysis.

PSC 312. THE PRESIDENCY. (3) Analysis of the role of the Presidency in the American political system and its relationships with the other branches of government. The course includes study of the strategies of presidential nomination and election, the sources and indicators of presidential power, how those who have held the office have shaped it and been shaped by it.

PSC 313. JUDICIAL BEHAVIOR. (3) Survey of the empirical studies concerning the determinants of the behavior of judges.

PSC 314. AMERICAN CONSTITUTIONAL LAW. (3) Examines the development of American constitutionalism, with a major emphasis on the roles played by the Supreme Court in the emergence of the American political system. Studies the justices as intellectual personalities engaged in the formulation of national policies. Utilizes Supreme Court decisions and opinions, histories, biographies and political science analyses to study the evolution of governmental powers and individual rights from colonial America through the end of the Roosevelt Court or Stone Court in 1946.

PSC 315. CIVIL RIGHTS AND LIBERTIES. (3) An analysis of Supreme Court decisions relating to civil rights and liberties.

PSC 316. JUDICIAL PROCESS. (3) Analysis of the structure and functions of federal and state courts in the context of the American political system. Emphasis upon the roles of judges, juries, counsel, litigants, police, interest groups and other actors in the adjudication processes.

PSC 317. POLITICS OF CRIMINAL LAW. (3) This course studies the politics of the Supreme Court interactions with the Congress, Presidency, Justice Department and the states in the formulation of policies related to the criminal law.

PSC 318. LAW AND SOCIAL CHANGE. (3) Examines the formulation of desegregation and poverty policies at the national,

state and local levels. It studies the interaction of law and social change in these areas of public policy with an emphasis upon the political processes of courts and other legal subsystems.

PSC 319. STATE POLITICS. (3) Comparative analysis of the 50 states, utilizing socioeconomic characteristics, structural traits and policy outputs as the primary variables of interest.

PSC 321. URBAN POLITICS. (3) Analysis of the political process in the nation's metropolitan areas and the adjustments and responses of the U.S. governmental system in attempting to cope with the urban crisis.

PSC 322. CONTEMPORARY URBAN PROBLEMS. (3) A study of selected urban problems, including an analysis of the causes and consequences of governmental policies designed to cope with these problems. Topics of interest would include: crime and law enforcement, poverty and welfare, urban transportation, education, pollution, housing and redevelopment, and urban revenue and expenditure patterns.

PSC 323. WOMEN AND POLITICS. (3) An examination of the political roles played by women as elected officials, bureaucrats, and appointed board members. Focuses on the recruitment, activities and special problems of women in politics.

COMPARATIVE POLITICS AND AREA STUDIES

PSC 331. THE NATURE OF POLITICAL CHANGE. (3) Comparative study of political change with reference to problems of reform, revolution and nation-building.

PSC 332. THE POLITICS OF MODERNIZATION IN WESTERN SOCIETIES. (3) An examination of cultural crises, the emergence of a counter-culture and the development of new forms of political opposition within western industrial societies. Exploration of possible societal form of the future, including the post-welfare state and the western technocracy.

PSC 335. POLITICAL VIOLENCE. (3) This course is designed to address four questions: (1) What is political violence? (2) Why does it occur? (3) What is its relationship to other political processes? (4) What is its impact on society? The emphasis of this course, while drawing on examples from contemporary American and foreign scenes, is on examining manifestations of violent political behavior such as pathological violence, conspiratorial violence, collective violence and governmental violence.

PSC 336. COMPARATIVE URBAN POLITICS. (3) Urban growth, urban problems, and political response in cross-national perspective. Focus on the urban policy process including political explanations for variations in national urban growth and urban structure. Attention to selected case and comparative studies on the U.S., Europe, Latin America, Africa and Asia.

PSC 337. POLITICAL CORRUPTION. (3) The use of public office for private ends in the United States and in comparative perspective.

PSC 341. GOVERNMENT AND POLITICS OF WESTERN EUROPE. (3) Comparative analysis of selected West European governments including Great Britain, France, Germany and Italy.

PSC 343. AFRICAN POLITICS. (3) A comparative perspective on the politics of independence in sub-Saharan Africa and on the performance of the new political systems there in terms of national and international integration and the modernization of traditional societies and economies.

PSC 345. GOVERNMENT AND POLITICS OF THE SOVIET UNION. (3) The origins of Bolshevism and the substance and role of Marxist-Leninist ideology. The structure and functions of the Communist Party of the Soviet Union (CPSU). The principles of Soviet politics and the instruments of rule. The Soviet political system in transition and its relationship to world communism.

PSC 346. COMMUNIST POLITICS IN COMPARISON. (3) Studies the most dynamic features of communist public order systems including the Soviet Union, Poland, Czechoslovakia, Hungary, Yugoslavia, Cuba and the People's Republic of China. Compares ideologies, party leaderships, youth movements, interest groups, political dissent and the politics of human mobilization and national development.

PSC 347. GOVERNMENT AND POLITICS OF LATIN AMERICA. (3) Comparative study of the political development of Latin American political systems with reference to selected aspects and problems of contemporary politics in the region.

PSC 348. POLITICS IN THE PEOPLE'S REPUBLIC OF CHINA. (3) Revolution, ideology and organization in communist China. The origins, development and maintenance of the Chinese political system. Cross-national comparison with other communist and mobilization systems.

PSC 349. GOVERNMENT AND POLITICS OF ASIA—DEMOCRATIC SYSTEMS. (3) Political behavior and the growth of democratic political institutions in selected Asian states, particularly Japan. Emphasis on the nature of political change and political process—political participation and recruitment, political socialization, party systems and voting behavior, policy formation. Cross-national comparison with non-Asian democratic systems.

INTERNATIONAL RELATIONS

PSC 353. POLITICAL FOUNDATIONS OF INTERNATIONAL ORDER. (3) The structure, processes and problems of general and regional international organizations, and the origins and contemporary role of international law.

PSC 357. AMERICAN FOREIGN POLICY. (3) The evolution of U.S. national interests and contemporary decision-making. Explores national and international determinants and emphasizes learning through formal debates focused upon U.S. policies and crisis behavior.

PSC 357L. AMERICAN FOREIGN POLICY LABORATORY. (1) The laboratory experience will allow students to simulate the decision-making process of the United States government in the solution of key foreign policy issues. One laboratory period of two hours per week.

PSC 359. SOVIET FOREIGN POLICY. (3) The concepts, content and evolution of Soviet foreign relations, with emphasis upon change and continuity in Russian and Soviet policies. Contemporary problems of Soviet diplomacy with other world powers and with the Marxist Leninist nations of the Communist international system.

PSC 360. COMPARATIVE FOREIGN POLICIES. (3) Comparative analysis of the foreign policies of both large and small nation-states. This course, with the use of comparative approaches, focuses on the major variables within and outside contemporary states that influence the nature of their foreign policies. Of particular importance will be the examination of both variables on foreign policy under specifiable conditions and the policy-making apparatus of each state.

PSC 361. PROBLEMS OF DEFENSE AND NATIONAL SECURITY POLICY. (3) Investigates major concepts of war and the problems of arms control, escalation and the proliferation of nuclear weapons. Examines trends and conditions of international conflict, technological change and domestic political environments as they relate to defense and national security.

PSC 362. INTERNATIONAL LAW. (3) An historical and political analysis of the sources and development of international law. Particular attention is given to the role of modern international law in the relations of nation-states and its application to contemporary global problems.

PSC 365. EAST ASIA IN WORLD AFFAIRS. (3) An examination of the basic factors governing East Asia's role in world affairs, both traditionally and in the present day.

PSC 469. SCOPE AND THEORY IN INTERNATIONAL POLITICS. (3) Prerequisites: PSC 130 or 150. Survey of major theories in the field, with emphasis on contemporary, empirically based approaches to theory building.

POLITICAL THEORY

PSC 371. HISTORY OF CLASSICAL POLITICAL THOUGHT. (3) Major concepts and systems of political thought from Plato to the seventeenth century.

PSC 373. HISTORY OF MODERN POLITICAL THOUGHT. (3) Major concepts and systems of political thought from the seventeenth century to the present.

PSC 374. CONTEMPORARY SYSTEMATIC POLITICAL THEORY. (3) A review of the major contemporary theorists who present a comprehensive and systematic analysis, evaluation or prescription of politics. Both normative and empirical approaches will be used in studying twentieth century democratic theory, systems analysis, group theory power concepts and neo-Marxian and conservative ideologies.

PSC 375. LEGAL THOUGHT. (3) An analysis of such law-related issues as justification for criminal punishment, the obligation to obey the law, the enforcement of morals and war and morality.

PUBLIC ADMINISTRATION

PSC 383. ADMINISTRATIVE BEHAVIOR. (3) The role of the administrator and public bureaucracy in modern democratic society. Particular attention will be given to the interplay of forces created by executives, legislators, political parties and interest groups.

PSC 384. DECISION MAKING IN PUBLIC ADMINISTRATION. (3) An examination of the major schools of decision making theory: rationalism, incrementalism and mixed-scanning. The use of these approaches in public administration in areas of budgeting, organization and program design, and personnel will be studied, using problem sets and simulation techniques.

PSC 386. POLITICS OF PLANNING. (3) An examination of the governmental planning process with an emphasis on the land-use and growth management systems of urban areas. The processes and impacts of local, regional, state, and federal planning will be discussed.

PSC 387. URBAN ADMINISTRATION. (3) A study of administration in the context of the urban setting. Attention will be given to urban governmental bureaucracies, their response to and interaction with their environments, and their roles in developing urban policy.

SCOPE AND METHODS OF POLITICAL SCIENCE

PSC 390. POLITICAL MEASUREMENT. (3) An introduction to the use of quantitative techniques in the analysis of political data. The course emphasizes the understanding of measurement concepts and introduces the student to practical applications in working with quantitative data.

PSC 390L. POLITICAL MEASUREMENT LABORATORY. (1) One two-hour laboratory period per week. The laboratory is required for successful completion of PSC 390 and is to be taken concurrently with PSC 390. The laboratory is open only to students who are enrolled in PSC 390.

PSC 391. RESEARCH METHODS IN POLITICAL SCIENCE. (3) An introduction to research methods in political science to include a brief consideration of the following topics: philosophy of science literature; the place of research methods in the discipline of political science; research design; research strategies and techniques; data interpretation.

PSC 391L. RESEARCH METHODS LABORATORY. (1) One two-hour laboratory period per week. The laboratory is required for successful completion of PSC 391 and is to be taken concurrently with PSC 391. The laboratory is open only to students who are enrolled in PSC 391.

PSC 392. INTRODUCTION TO SURVEY RESEARCH. (3) An examination of the purposes, logic and procedures of survey research in the study of political attitudes and behavior. The major steps in survey research—planning, sampling, questionnaire design, data collection, processing data and analysis—will be reviewed. The student will have an opportunity to apply newly acquired skills in a field situation.

PSC 400. INDEPENDENT STUDY. (1-3) Prerequisite: consent of the instructor. Supervised investigation of a political problem that is (1) of special interest to the student; (2) within the area of the instructor's special competence; and (3) normally an extension of previous course work with the instructor. A student may take more than one course under this number.

PSC 490. SENIOR PROJECT. (3) Prerequisite: PSC 390, 391 or 392. The student completes an article length research paper or other project under the direct supervision of a member of the faculty. The paper or project must involve quantitative or other methods of modern political analysis. In seminar fashion the students and a faculty member will meet to discuss and criticize the senior projects.

DEPARTMENT OF PSYCHOLOGY

Chairman: Professor Grimsley
Professor: Diamant*
Associate Professors: Lamal, Simono, Sohn
Assistant Professors: Bauer, Calhoun, Cann, Fernald, Goolkasian, Long, Maitland, Selby, Siegfried, Terry, Toner, Wachowiak, Wetherington, Windholz
Lecturer: Davis, Lamberth, McCarver, Tedeschi
Lecturer (part-time): Bondy, Starnes

A major in psychology leading to the B.A. degree consists of 29 semester hours of psychology including General Psychology (101 and 101L), Research Methodology (241), History and Systems of Psychology (461) and a senior seminar (491, 492, 493, 494, 495, 496).

Other course requirements for majors are MAT 122 (Elements of Statistics), two courses from the subject area of biology, chemistry, earth science or physics and six hours of social science exclusive of psychology.

The additional courses necessary to fulfill the 29 hour requirement of the major should be selected to aid the student in the attainment of higher goals. However, the student cannot include more than three hours credit in Psychology 489 and three hours credit in psychology 490 in the 29 hour requirement of the major. Students considering graduate school are strongly urged to take courses in basic psychological processes, eg., learning, sensation and perception, physiological psychology.

Related work consists of 18 semester hours which are to be arranged by the student and the faculty adviser. Related work should be considered in terms of the fulfillment of the individual's vocational and educational goals. Students in the elementary education program may use the education sequence as related work.

RECOMMENDED CURRICULUM FOR THE B.A. DEGREE IN PSYCHOLOGY

FRESHMAN YEAR

Psychology 101	3	Psychology (202, 203 210, 220 or 230)	3
Psychology 101L	1	Humanities	3
Math 101 or 103**	3	Math 122 for SBS	3
Natural Science (with lab; either biology, chemistry, earth science, or physics)	4	Natural Science (either biology, chemistry, earth science, or physics)	3-4
English	3	English	3
	14		15-16

*On leave of absence 1976-77

**Students who seek certification in early childhood and elementary education should take Math 130 and 131 instead of 101. They will then take Math 122, and PSY 241 will be taken one semester later.

SOPHOMORE YEAR

Psychology 241	4	Psychology (200 or 300 level)	6
Social Science	3	Related Work	3
Related Work	3	Social Science	3
Elective	3	Elective	3
Humanities	3		
	16		15

JUNIOR YEAR

Psychology (300 level and above)	3-6	Psychology (300 level and above)	3-6
Related Work	6	Related Work	6
Electives	3-6	Electives	3-6
	15		15

SENIOR YEAR

Seminar in Psychology	3	Seminar in Psychology	3
or		or	
Psychology 461	3	Psychology 461	3
Electives	12	Electives	11
	15		14

COURSE DESCRIPTION

PSYCHOLOGY

PSY 101. GENERAL PSYCHOLOGY. (3) A survey of the field including such topics as learning, emotions, motivation, personality, psychological testing and abnormal behavior. Emphasis on psychology as a behavioral science. May be taken with or without the lab. All psychology majors and those who wish to apply this course as partial fulfillment of the University science requirement must take PSY 101L during the same semester in which they take PSY 101.

PSY 101L. GENERAL PSYCHOLOGY LABORATORY. (1) Two one-hour laboratory periods per week. An introduction to laboratory equipment and procedures. (May not be taken apart from the lecture portion of PSY 101 except by psychology majors who have permission of the department.)

PSY 202. EDUCATIONAL PSYCHOLOGY. (3) Prerequisite: PSY 101. The psychology of learning; problems related to concept formation and application of behavior modification techniques to the classroom.

PSY 203. PSYCHOLOGY OF ADJUSTMENT. (3) Prerequisite: PSY 101. The study of the process of adjustment. Primary consideration given to motivation, frustration and conflict, adjustment mechanisms and psychotherapy.

PSY 210. DEVELOPMENTAL PSYCHOLOGY. (3) Prerequisite: PSY 101. A detailed discussion of the principles of psychological change from infancy to old age, with a consideration of genetic, physiological and environmental determinants.

PSY 220. CHILD PSYCHOLOGY. (3) Prerequisite: PSY 101. Psychological development in infancy and childhood, including the development of learning, thought, language, social relations, intelligence and morality. Remedial measures suggested in dealing with early child tendencies which might otherwise lead to severe academic and social difficulties.

PSY 230. ADOLESCENT PSYCHOLOGY. (3) Prerequisite: PSY 101. Developmental and psychological characteristics of adolescence. Research methods and familiarity in case study emphasized. School and personality problems studied.

PSY 241. RESEARCH METHODOLOGY. (4) Prerequisites: PSY 101, PSY 101L and MAT 122. An introduction to methods of psychological research including experimental, observational and correlational. Basic concepts of philosophy of science will also be discussed. Emphasis on methodology rather than content but the applicability of methods to current topics in psychology is covered. Three lecture hours and one two-hour laboratory period a week.

PSY 296. INTRODUCTION TO THE EXPERIMENTAL ANALYSES OF BEHAVIOR. (4) Prerequisite: PSY 101, PSY 241 or concurrently. An analysis of the methods and constructs of the experimental analysis of behavior including the application of the methods to laboratory research. Three lecture hours and one two-hour laboratory period a week.

PSY 303. SOCIAL PSYCHOLOGY. (3) Prerequisite: PSY 101. The social behavior of man. Man's behavior in relation to other individuals. Attitude change, social conflict, social interaction, social perception, and social influence processes are some of the specific topics treated. General theories of social behavior and research approaches are also considered.

PSY 305. PSYCHOLOGY OF PERSONALITY. (3) Prerequisite: PSY 101. Current personality theories. Consideration given to psychoanalytic, physiological, trait and factor, the perceptual viewpoints in the light of contemporary research.

PSY 307. ABNORMAL PSYCHOLOGY. (3) Prerequisite: PSY 101. A history of psychopathology. Case studies, differential diagnosis, psychological dynamics of abnormal behavior, including theoretical, clinical and experimental contributions in the field.

PSY 310. COMPARATIVE PSYCHOLOGY. (3) Prerequisite: PSY 101. An introduction to the study of animal and human behavior from a comparative point of view. Emphasis on the classification of behavior patterns as well as the origin and development of these patterns.

PSY 311. PSYCHOLOGY OF LEARNING. (3) Prerequisite: PSY 101. (Completion of PSY 241 is strongly recommended.) A survey of the major theories and empirical findings in the area of learning.

PSY 312. MOTIVATION. (3) Prerequisite: PSY 101. (Completion of PSY 241 is strongly recommended.) A study of the current theories and research in the area of human and animal motivation.

PSY 313. SENSATION AND PERCEPTION. (3) Prerequisite: PSY 101. A survey of sensory and perceptual processes, including such topics as psycho-physics, information processing and color perception.

PSY 371. INDUSTRIAL PSYCHOLOGY. (3) Prerequisite: PSY 101. Psychological theories as applied to industry and business. Studies in human engineering and personnel problems.

PSY 396. CONSEQUENCES AND THE SOURCES OF BEHAVIOR CONTROL. (4) Prerequisite: PSY 296. An analyses of the application of the principles and techniques of the experimental analysis of behavior to a variety of behavior problems in a number of different environments with an emphasis on extrapolation to new and different problems and settings. (Students will be required to develop individualized projects to be conducted off-campus, utilizing the material discussed in class.

PSY 401. TOPICS IN PSYCHOLOGY. (3) Prerequisite: consent of the instructor. Examination of special psychological topics. May be repeated for credit.

PSY 430. HUMAN COGNITIVE PROCESSES. (3) Prerequisite: PSY 101. A study of the processes involved in such complex human behaviors as language (acquisition and usage), memory and problem solving. Emphasis will be upon experimental findings and current theories.

PSY 451. PHYSIOLOGICAL PSYCHOLOGY. (3) Prerequisite: PSY 101. The relationship of physiological systems to integrated behavior. Emphasis on neural aspects of behavior and current studies in reaction to drug and other stimuli.

PSY 461. HISTORY AND SYSTEMS OF PSYCHOLOGY. (3) Prerequisite: PSY 101. Influential psychological systems and their historical antecedents. Emphasis on Gestalt, Psychoanalytic and behavior theory. Evaluation of current existential influence.

PSY 480. RESEARCH METHODS IN PHYSIOLOGICAL PSYCHOLOGY. (4) Prerequisites: PSY 101 and permission of the instructor. An introduction to current laboratory techniques in physiological psychology, including basic surgeries, lesioning, stimulation and histology. Three lecture hours and one two-hour laboratory period a week.

PSY 481. PSYCHOLOGICAL COUNSELING AND PSYCHOTHERAPY. (3) Prerequisite: PSY 101 and PSY 307. An introduction to the major theories of psychological counseling and psychotherapy with special emphasis on individual techniques including diagnosis.

PSY 489. PRACTICUM IN APPLIED PSYCHOLOGY. (1-4) Prerequisite: permission of the instructor. A course allowing junior and senior students the opportunity to work in practical settings related to psychology under the supervision of a faculty member. (May be repeated for credit with departmental permission. The student must have obtained approval in the semester preceding the semester in which the practicum is to be taken.)

PSY 490. INDIVIDUAL STUDIES IN PSYCHOLOGY. (1-4) Prerequisite: permission of the instructor. A course allowing the student of psychology an opportunity for individualizing study. This study may take the form of initiating, designing and conducting an original research problem or a critique and synthesis of the existing research in his area of interest. May be repeated for credit.

PSY 491. SEMINAR IN HUMAN ADAPTATION AND BEHAVIOR. (3) Prerequisite: senior standing and permission of the instructor. Intensive reading and discussion in selected areas of psychology, such as stress, personality, emotions and psychopathology.

PSY 492. SEMINAR IN SOCIAL PSYCHOLOGY . (3) Prerequisite: permission of the instructor. An intensive study at the advanced level of topics of current research and theoretical interest in social psychology.

PSY 493. SEMINAR IN PHYSIOLOGICAL PSYCHOLOGY. (3) Prerequisite: PSY 101 and permission of the instructor. An intensive study of selected topics in physiological psychology, such as psychopharmocology and neuro-physiological basis of learning and memory.

PSY 494. SEMINAR IN EXPERIMENTAL PSYCHOLOGY. (3) Admission by consent of the instructor. An in-depth examination of an area of current concern in psychological laboratory. Each semester will have a different focus, and such topics as discrimination learning, memory, experimental analysis of behavior, and attention will alternate.

PSY 495. SEMINAR IN DEVELOPMENTAL PSYCHOLOGY. (3) Prerequisite: PSY 101 and permission of the instructor. This seminar will be a concentrated examination of current issues and research in a field of developmental psychology. Such topics as the concept of development in historical and current usage, learning (especially in human infants), development of social relations, intelligence, cognitive abilities and the acquisition of language will be treated in detail.

PSY 496. SENIOR SEMINAR IN BEHAVIOR MODIFICATION. (3) Prerequisite: PSY 296, PSY 396, PSY 489. Discussion and analysis of the current issues in behavior modification, including an integration of principles, techniques, and practical experiences.

PSY 501. PSYCHOLOGY OF EXCEPTIONAL CHILDREN. (3) Assessing the exceptional child. Emphasis on current research in several diagnostic categories.

PSY 502. ADJUSTMENT PROBLEMS OF THE DISADVANTAGED. (3) A seminar concerned with such issues as racial attitudes, prejudice, and poverty. Assigned reading and discussion deal with the application of psychological principles to these problems. Contributing lecturers with professional experience with problems of the disadvantaged will participate.

PSY 503. PSYCHOLOGY OF MENTAL RETARDATION. (3) An intensive study of the psychological and sociological aspects of mental retardation in relation to adjustment and educational development. Emphasis on current research and diagnostic categories.

PSY 504. TESTS AND MEASUREMENTS. (3) Prerequisite: PSY 101. A survey of psychological and educational measurements in current use. Emphasis will be placed on structure, administration and application of group tests. Individual tests such as Stanford-Binet, WISC and WAIS will be reviewed.

PSY 505. ADVANCED PERSONALITY THEORY. (3) A critical evaluation of the major personality theories including an extensive survey of current research.

PSY 514. METHODS OF STUDENT EVALUATION. (3) Prerequisite: permission of the instructor. A practical course of construction of teacher-made evaluation procedures. Special emphasis will be placed on writing and item analysis of essay and restricted-response achievement tests.

PSY 520. PSYCHOLOGY OF THINKING. (3) The study of theories of learning, thinking, and cognition, especially as they apply to the educational process.

DEPARTMENT OF SOCIOLOGY AND ANTHROPOLOGY

Chairman: Professor Goodnight
Associate Professors: Ferraro, Heitman, Lance, Rent
Assistant Professors: Bertoli, Bonney, Cook, Dubisch, Fischer, Forrest, Hayes, Michalowski, Roberts, Scout, Wilson
Lecturers: Hicks, Latimore
Lecturers (part-time): Frye, Patnaik, Smith, Wolf

The Department of Sociology and Anthropology includes the disciplines of sociology and anthropology and the field of social

work. Academic majors are available in anthropology and sociology. A variety of social work courses is offered, and plans are under way to expand offerings and further develop the program in this area.

Anthropology

Anthropology is the study of man and his culture and is organized into four sub-fields: cultural anthropology, archeology, physical anthropology and linguistics. It focuses upon his cultural heritage and history and upon the biological aspects of man which relate to his cultural development. It emphasizes the comparative study of man and the cross-cultural analysis of his institutionalized responses to fundamental human needs.

The study of anthropology is relevant for persons whose occupations and endeavors require an understanding of a variety of cultures. It is particularly useful for teachers of students from diverse cultural backgrounds, social workers and persons seeking careers in journalism and communications as well as persons who plan to work in or with foreign countries. It provides competencies needed for employment in such organizations as museums, highway departments (as archeologists), police departments (as physical anthropologists), the park service and the Bureau of Indian Affairs.

Sociology

Sociology is the scientific study of man's social life. It focuses upon the forces which organize and structure societies and smaller groups as well as the forces which disorganize and threaten to dissolve them. As a science, sociology applies an objective and systematic method of investigation to identify the patterns and forms of social life and to understand the processes by which they are established and changed.

The study of sociology is particularly attractive to persons preparing for further study and professional careers as well as persons who are seeking a liberal education and immediate employment. As a liberal arts program, it enables the student to understand the social context in which he finds himself and the social forces which shape his personality, his actions and his interactions with others. As a preprofessional program it provides a good background for persons entering social work, law, teaching, the ministry, journalism, planning, public relations and personnel services. It also provides analytical skills related to market research and program evaluation in human services, sales, management and other business activities.

Social Work

Social work includes the study and enhancement of human social functioning. It focuses upon the prevention, treatment and control of problems in the social life of individuals, groups and communities. It blends knowledge from the social and behavioral sciences with

social work theory and skills in the professional application of the helping relationship.

The study of social work prepares persons for further study and careers in social welfare, including direct social service, family counseling and crisis intervention. It provides an excellent background for careers involving the planning, administration and evaluation of social services. It also provides knowledge and skills utilized by vocational rehabilitation counselors, probation and parole officers, medical and psychiatric social workers and other members of community and industrial social service organizations.

THE PROGRAMS

Anthropology Major

The undergraduate program in anthropology is designed to respond to the following objectives:

1. To examine society and culture scientifically and to develop an understanding of the research process;

2. To examine human behavior from a cross-cultural perspective in order to reduce ethnocentrism and develop a better perspective of one's culture;

3. To examine the interconnections between the biological, cultural, and social bases of human behavior within both contemporary and historical frameworks;

5. To develop an understanding of the interconnections between the various parts of socio-cultural systems and their functional implications for change; and

5. To develop an understanding of anthropological inquiry and how it relates to other scientific and humanistic disciplines.

The anthropology curriculum is designed to familiarize the student with the broad range of anthropological concerns (socio-cultural anthropology, archeology, physical anthropology, and anthropological linguistics) and to enable the student to integrate these sub-fields into a framework for the holistic understanding of human behavior and evolutionary development. Formal course offerings are supplemented with extra-classroom activities involving the application of anthropological theories and methods to contemporary urbanizing society. Students should consult with the Department of Sociology and Anthropology concerning internships and field schools in anthropology and archeology.

Requirements

As a means of achieving the above objectives, students selecting a concentration in anthropology must satisfy the following requirements:

1. Completion of 31 semester hours of anthropology, including

   a. ANT 101, 301, and 401;

   b. Twenty-one semester hours of electives in anthropology of which at least six semester hours must be taken in cultural anthropology and six semester hours in archeology/physical anthropology; and

2. Completion of 18 semester hours of related work to be arranged in consultation with the student's adviser and organized around a region, an allied discipline or a theme.

SUGGESTED CURRICULUM FOR THE B.A. DEGREE IN ANTHROPOLOGY

FRESHMAN YEAR

Anthropology 101	3	Anthropology Elective	3
English	3	English	3
Foreign Language or Math	4-3	Foreign Language or Math	4-3
Natural Science	4	Natural Science	4
Humanities	3	Social Science	3
	17-16		17-16

SOPHOMORE YEAR

Anthropology Electives	6	Anthropology Electives	6
Foreign Language or Elective	4-3	Foreign Language or Elective	4-3
Humanities	3	Social Science	3
Related Work	3	Related Work	3
	16-15		16-15

JUNIOR YEAR

Anthropology 301	4	Anthropology Electives	6
Related Work	3	Related Work	3
Electives	6	Electives	6
	13		15

SENIOR YEAR

Anthropology Elective	3	Anthropology 401	3
Related Work	3	Related Work	3
Electives	9	Electives	9
	15		15

Sociology Major

The undergraduate program in sociology is designed to respond to the needs of individuals and society:

1. To understand themselves, each other, and the interrelationships between individual and society;

2. To comprehend the past and present influence of social factors and their implications for the future;

3. To acquire the perspective and skills necessary for acquiring and applying sociological knowledge; and

4. To predict and control the influence of social factors for the prevention and amelioration of social problems.

The sociology curriculum is designed to familiarize the student with the questions sociologists ask about social reality, the conceptual and methodological tools they utilize to gain answers to these questions and the resultant body of knowledge. It is relatively structured in terms of the number of courses the student is required to take, but it is highly flexible in terms of the freedom to focus upon and become involved in inquiry pertaining to sociological problems of the student's own choosing within each of these courses. Students should consult with the Department of Sociology and Anthropology about internship opportunities in sociology.

Requirements. A major in sociology leading to the B.A. degree consists of (1) a minimum of 29 semester hours of sociology beyond the 100 level including the core curriculum of SOC 151, 253, 254, 354, 355 and 456; and (2) a minimum of 18 semester hours of related work.

Related work is arranged by the student in consultation with an adviser and may consist of a concentration of courses: (1) within a single discipline; (2) selected from two complementary disciplines; or (3) focused upon a specific topic. Students in the teacher certification program may use the courses in the professional education sequences as their related work.

SUGGESTED CURRICULUM FOR THE B.A. DEGREE IN SOCIOLOGY

FRESHMAN YEAR

Sociology 151	3	Sociology Electives	6
English	3	English	3
Math or Foreign Language	3-4	Math, Logic or Foreign Language	3-4
Natural Science	4	Natural Science	4
Humanities	3		
	16-17		16-17

SOPHOMORE YEAR

Sociology 253	3	Sociology 354	3
Social Science	3	Social Science	3
Humanities	3	Related Work	3
Related Work	3	Foreign Language or Electives	4-6
Foreign Language or Electives	4-3		
	16-15		13-15

JUNIOR YEAR

Sociology 355	4	Sociology 254	4
Sociology Elective	3	Sociology Elective	3
Related Work	3	Related Work	3
Elective	3	Electives	6
	13		16

SENIOR YEAR

Sociology 456	3	Related Work	3
Related Work	3	Sociology Internship	3-6
Electives	9	Electives	9-6
	15		15

Concentration in Social Work

Students interested in preparing for careers in social work may designate "social work" as the topic around which they will build a related work program. Such a program should be carefully planned to build on and be integrated with knowledge from the humanities, social, behavioral and biological sciences. The following social work courses are required for a related work concentration in social work:

SOC 380. Field of Social Work (3)
SOC 481. Methods of Social Work (3)
SOC 482. Internship in Social Work (3-6)
SOC 483. Social Work Internship Seminar (3-6)

SOC 490. Social Welfare Policy (3)
SOC 490. Foundations in Social Welfare Policy (3)

Students should consult with the Department of Sociology and Anthropology concerning internship or field placement opportunities and the selection of related courses.

SUGGESTED RELATED WORK SEQUENCE IN SOCIAL WORK

JUNIOR YEAR

Sociology 380 3	Sociology 481 3
	Sociology 490 (Foundations) 3

SENIOR YEAR

Sociology 482 3-6	Sociology 482 3-6
Sociology 483 3	Sociology 483 3
Sociology 490 (Policy) 3	

COURSE DESCRIPTIONS

ANTHROPOLOGY

ANT 101. GENERAL ANTHROPOLOGY. (3) A general introduction to the four subfields of anthropology, covering such topics as man's biological and cultural evolution; the structure and functions of various institutions in primitive, peasant and modern complex societies; language and culture; and methods of cultural analysis and theories of culture. Prerequisite for all upper level courses in anthropology.

ANT 210. TOPICS IN ETHNOGRAPHY. (3) Prerequisite: General Anthropology. Examination of ethnographic regions of the world selected for study by students and faculty members. May be repeated for credit as the topics vary. Examples of courses regularly offered under this designation are:

PEASANT SOCIETY. Anthropological approach to peasant societies, including analysis of general characteristics of peasantry and examination of individual peasant societies. Emphasis both on the traditional aspects of these societies and on such contemporary problems as modernization, revolution, population growth and world hunger.

NORTH AMERICAN INDIANS. A comprehensive survey of the native peoples of America, their cultures at the time of European contact, major historical events and relationships, and contemporary issues in Indian affairs. Guest speakers and field trips.

AFRICAN ETHNOGRAPHY. Examination of traditional social and cultural institutions among African peoples with par-

ticular emphasis on the analysis of traditional economic, political, religious and kinship institutions and their structural implications for change.

ANT 221. KINSHIP AND MARRIAGE. (3) Prerequisite: ANT 101. An examination of types of kinship groups, kinship terminology and behavior, marriage, types of family organization, and sex roles as they relate to kinship.

ANT 222. BELIEF SYSTEMS. (3) Prerequisite: ANT 101. An examination of belief systems, their structure and content, and their role in human behavior. Included will be religion, philosophy, myth, folklore, magic and ritual.

ANT 223. CULTURE AND PERSONALITY. (3) Prerequisite: ANT 101. A survey of anthropological contributions to theories of personality formation including data on tribal and national characteristics, patterns of child-rearing, culturally derived aspects of human behavior, deviancy, and personal integration with the cultural milieu.

ANT 224. LANGUAGE AND CULTURE. (3) Prerequisite: ANT 101. An examination of the relationship between language and culture including such topics as the Sapir-Whorf hypothesis, componential analysis, dialects, and situation analysis of language.

ANT 225. URBAN ANTHROPOLOGY. (3) Prerequisite: ANT 101. The cross-cultural analysis of urban social structures, including the rise of early cities, analysis of migration and adaptation of rural populations. Varieties in form and function of the city will be examined, along with changes and continuities in family life, economic institutions, religious norms and world view.

ANT 241. PRINCIPLES OF PHYSICAL ANTHROPOLOGY. (3) Prerequisite: ANT 101. A survey of the major components of modern physical anthropology, including principles of heredity and genetics, evolution of man's biological characteristics, race, and the comparative study of primate anatomy, physiology and behavior.

ANT 250. TOPICS IN ARCHEOLOGY. (3) Prerequisite: ANT 101. Examination of specialized topics in archeology. May be repeated for credit as topics vary.

ANT 251. WORLD PREHISTORY. (3) Prerequisite: ANT 101. A survey of trends in cultural development, a comparison of representative cultural histories from major world areas, and a survey of major archeological sites, methods, and theories.

ANT 253. FIELD SCHOOL IN ARCHEOLOGY. (6) Prerequisite: ANT 101 and the consent of the instructor. Introduction to archeological field methods through participation in actual site excavation. Instruction will be given in excavation procedures, survey techniques, recording, photographing, preservation, cataloging and analysis.

ANT 301. APPLICATIONS OF ANTHROPOLOGICAL THEORY AND METHODS. (4) Prerequisite: ANT 101. Examination of the interrelationship of anthropological theory including the study of major theoretical approaches and the methods appropriate to them. Students will engage in projects utilizing various methodological techniques for the development and researching of various problems. Three hours of lecture-discussion and two hours of lab each week.

ANT 311. CULTURE CHANGE AND APPLIED ANTHROPOLOGY. (3) Prerequisite: ANT 101. An examination of cultural dynamics, agents and conditions promoting growth, mechanisms of cultural growth, and the application of anthropological theories and methods to domestic and foreign programs of sociocultural change.

ANT 401. SEMINAR IN GENERAL ANTHROPOLOGY. (3) Prerequisite: ANT 301. The synthesis and integration of the various sub-fields of anthropology through the present presentation of projects to seminar members for criticism and evaluation. The present orientation of the discipline, its uses, and its future will be examined.

ANT 480. INTERNSHIP IN ANTHROPOLOGY. (3-6) Prerequisite: consent of the Department. Research and/or in-service training experience for selected students in cooperating community organizations. Content of each internship will be based upon a contractual agreement between the student, department and community organization. Amount of credit to be determined by the nature and extent of the internship assignment. May be repeated for credit up to a maximum of six semester hours. Offered only on a *Pass/No Credit* basis.

ANT 490. TOPICS IN ANTHROPOLOGY (1-3). Prerequisite: ANT 101 and consent of the department. Examination of specialized topics in anthropology. May be repeated for credit as topics vary. Examples of courses which have been taught under this designation are:

AMERICAN INDIANS FOR TEACHERS. A course designed to assist elementary and social studies teachers in planning and teaching Indian Studies units in the classroom. Workshop sessions include lectures on Indian cultures and history, arts and crafts activities, music, dance, games, religion and folklore, languages and foods. Students prepare actual Indian Studies units for implementation in their classes.

PRIMATE BEHAVIOR. An examination of primate behavior, with emphasis on field and laboratory studies of apes and Old World monkeys. The relationship of studies to the evolution of human behavior and the development of culture and their significance for understanding human behavior today will be assessed.

ANT 495. DIRECTED INDIVIDUAL STUDY. (1-4) Prerequisite: ANT 101 and consent of the department. Supervised investigation of problems and areas in anthropology of special interest to the student. May be repeated for credit.

SOCIAL WORK

SOC 380. FIELD OF SOCIAL WORK. (3) Prerequisite: consent of the instructor. Description and analysis of the historical development and philosophy of social work and the operation of many specialized social services in contemporary society. (Does not satisfy the general degree requirements for social science.)

SOC 481. METHODS OF SOCIAL WORK. (3) Prerequisite: SOC 380. Introduction to theories and principles of methods used in working with individuals, groups and communities in correctional, medical, psychiatric and other settings utilizing recent literature and case materials. (Does not satisfy the general degree requirements for social science.)

SOC 482. INTERNSHIP IN SOCIAL WORK. (3-6) Prerequisite: SOC 481 and consent of the department; corequisite: SOC 483. Directed field experience under professional supervision in selected community agencies. Content of each internship will be based upon a contractual agreement between the student, department, and cooperating agency. Amount of credit to be determined by the number of hours of the field experience. May be repeated for credit up to a maximum of six semester hours. Offered only on a *Pass/No Credit* basis.

SOC 483. SOCIAL WORK INTERNSHIP SEMINAR. (3) Corequisite: SOC 482. Analysis and discussion of student internship experiences in relation to established concepts of social work theory and practice. May be repeated for credit.

SOCIOLOGY

SOC 151. INTRODUCTION TO SOCIOLOGY. (3) Introduction to sociology as a discipline, the sociological perspective and the process of sociological inquiry emphasizing fundamental concepts, principles and procedures.

SOC 232. SOCIOLOGY OF THE FAMILY. (3) Prerequisite: SOC 151. Description and analysis of the family as a social institution with special reference to historical and cross-cultural perspectives and the impact of social change on the family and its interrelations with other institutions.

SOC 253. EVOLUTION OF SOCIOLOGICAL INQUIRY. (3) Prerequisite: SOC 151 or the equivalent. Examination of the origins and evolution of fundamental sociological concepts, theories and research procedures and their contributions to sociological inquiry.

SOC 254. QUANTITATIVE SOCIOLOGICAL ANALYSIS (4) Prerequisite: SOC 253 or consent of the instructor. Examination of concepts and procedures pertaining to sociological inquiry with emphasis on data processing, measurement theory and quantitative models of social analysis. Three hours of lecture-discussion and two hours of laboratory each week.

SOC 271. SOCIAL PROBLEMS. (3) Prerequisite: SOC 151. Analysis of contemporary social problems and their consequences for mankind, with special emphasis upon the problems of American society.

SOC 310. AMERICAN MINORITY GROUPS. (3) Prerequisite: SOC 151. Analysis of the relations between dominant and minority groups in American society with special emphasis on the establishment, maintenance, and decline of dominance involving racial, ethnic and religious minorities.

SOC 321. HUMAN ECOLOGY. (3) Prerequisite: SOC 151. Examination of the patterns and principles of societal adjustments to the physical environment, the distribution of communities and institutions and the dynamics of ecological change.

SOC 322. POPULATION ANALYSIS. (3) Prerequisite: SOC 151. Analysis of patterns of human behavior and ideologies which influence the number, distribution and composition of population and the effect of population characteristics and changes upon society.

SOC 324. SOCIOLOGY OF THE COMMUNITY. (3) Prerequisite: SOC 151. Analysis of the concept of community, methods for delineating and describing the dimensions of community and examination of planned and unplanned community change.

SOC 325. URBAN SOCIOLOGY. (3) Prerequisite: SOC 151. Examination of the origin and development of cities, the ecological and social structure of city and region, the nature and functioning of urban institutions and the process of urban decay and renewal.

SOC 343. SOCIAL MOVEMENTS. (3) Prerequisite: SOC 151. Analysis of collective behavior with emphasis on the ideology, development and organization of movements seeking or resisting change in the social order.

SOC 354. SOCIOLOGICAL INQUIRY: THEORIES AND THEIR CONSTRUCTION. (3) Prerequisite: SOC 254 or consent of the instructor. Systematic analysis of competing and complementary theories in contemporary sociology and the acquisition and application of the basic skills of theory construction.

SOC 355. SOCIOLOGICAL INQUIRY: METHODS OF VERIFICATION. (4) Prerequisite: SOC 354. Examination and application of research principles and techniques for the verification of sociological propositions, including the formulation of the problem, the design of the research, and the collection, analysis and interpre-

tation of the data. Three hours of lecture-discussion and a laboratory period of two hours each week.

SOC 361. SOCIALIZATION AND SOCIETY. (3) Prerequisite: SOC 151. Analysis of the process of socialization and social interaction and the sociocultural dimension of personality.

SOC 362. SOCIAL CONTROL. (3) Prerequisite: SOC 151. Analysis of the relation of social norms to conforming and deviant behavior with special attention to public opinion, propaganda and other techniques of social control.

SOC 372. SOCIOLOGY OF DEVIANT BEHAVIOR. (3) Prerequisite: SOC 151. Examination of the forms, causes, consequences and control of deviant behavior.

SOC 373. JUVENILE DELINQUENCY. (3) Prerequisite: SOC 151. Sociological analysis of the problem of youth crime with special attention to major sociological and social psychological theories of delinquency causation.

SOC 411. SOCIAL STRATIFICATION: POWER, PRIVILEGES, AND PRESTIGE. (3) Prerequisite: introductory sociology and consent of the instructor. Cross-cultural and comparative analysis of the distributive system of societies focusing upon the explanation of inequality among societies and the variations in power, privilege and prestige.

SOC 413. SOCIOLOGY OF WORK, OCCUPATIONS AND PROFESSIONS. (3) Prerequisite: introductory sociology and consent of the instructor. Analysis of occupational and professional socialization and roles; career patterns and professional ideologies; and occupational structure and change.

SOC 415. SOCIOLOGY OF COMPLEX ORGANIZATION. (3) Prerequisite: introductory sociology and consent of the instructor. Analysis of the structure and dynamics of complex organizations with special attention to rationalization through bureaucracy and the mechanisms of change.

SOC 432. SEMINAR IN CONTEMPORARY AMERICAN FAMILY SYSTEMS. (3) Prerequisites: introductory sociology and consent of instructor. Analysis of the development of modern American family systems, their relationship to American society and their contributions to personality development with special emphasis on conceptual frameworks for family analysis.

SOC 456. SEMINAR IN ADVANCED SOCIOLOGICAL INQUIRY. (3) Prerequisite: SOC 355. Synthesis and utilization of basic sociological principles and techniques in supervised independent theorization and verification, including the presentation of projects to seminar members and departmental faculty for evaluation and criticism.

SOC 473. CRIMINOLOGY. (3) Prerequisite: introductory sociology and consent of instructor. Analysis of sociological and psychological research pertaining to crime and crime statistics including historical and contemporary theories of criminal behavior and modern trends in criminal law and corrections.

SOC 480. INTERNSHIP IN SOCIOLOGY. (3-6) Prerequisite: consent of the Department. Research and/or in-service training experience for selected students in cooperating community organizations. Content of each internship will be based upon a contractual agreement between the student, department and community organization. Amount of credit to be determined by the nature and extent of the internship assignment. May be repeated for credit up to a maximum of six semester hours. Offered only on a *Pass/No Credit* basis.

SOC 485. APPLIED SOCIOLOGY. (3) Prerequisite: SOC 355 or consent of the instructor. Exploration of the role of sociologists in law and law enforcement, medicine, social work and social welfare, management, the military establishment, community development, foreign policy, the development of developing countries, urban poverty and planning and the educational system. Emphasis on the adaptation of sociological research methods and theory to temporal and other limitations imposed by the special characteristics of applied research.

SOC 490. TOPICS IN SOCIOLOGY. (1-3) Prerequisite: consent of the department. Examination of specialized sociological topics selected by students and faculty. May be repeated for credit. (A listing and brief description of specific courses offered each term is available from the departmental office.) Examples of courses which have been offered under this designation are:

THE SOCIOLOGY OF SMALL GROUPS. Systematic analysis and application of theoretical and empirical research pertaining to the behavior of small groups. An experiential approach is employed using role playing and observational procedures for the acquisition of knowledge and skills.

THE SOCIOLOGY OF SEX ROLES. An examination of changing sex role behavior in American society. Emphasis is given to the socialization process, institutional sexism and alternative sex role models.

POPULAR CULTURE. A sociological analysis of the popular forms of everyday life in America. Fashion, fads, entertainment, automobiles, television and similar topics from the sublime to the ridiculous are analyzed for their underlying significance as part of the American cultural scene. The course will emphasize the dialectic between culture and structure in an attempt to understand the impact of each upon the other.

SOCIOLOGY OF EDUCATION. Analysis of how the educational institution relates to the other societal institutions, with emphasis on the relationship between education and the economy.

SEMINAR IN THE SOCIOLOGY OF HOUSING. Housing is examined as both a social and a political variable in the life of man. A cross-cultural perspective is emphasized. Housing is examined as a social problem, as social policy, as an element in community development, in terms of tenant-landlord relationships and as related to culture, family life cycle, and social stratification.

SOCIAL SCIENCE RESEARCH FOR EDUCATORS. Application of basic social science research techniques to problems of concern to educators. Each student will have an opportunity to select a research problem relevant to his or her interests and proceed through the research process by means of a set of exercises.

SOCIAL SERVICES FOR CHILDREN AND YOUTH. Description and analysis of social welfare programs and practice as these relate to the needs and rights of children including unmet needs, issues and trends, and the uses of planning and research to develop more effective programs.

SOCIAL WELFARE POLICY. Analysis of the nature of social welfare policy and how it is developed as well as understanding of the implications of policy for program design and service delivery.

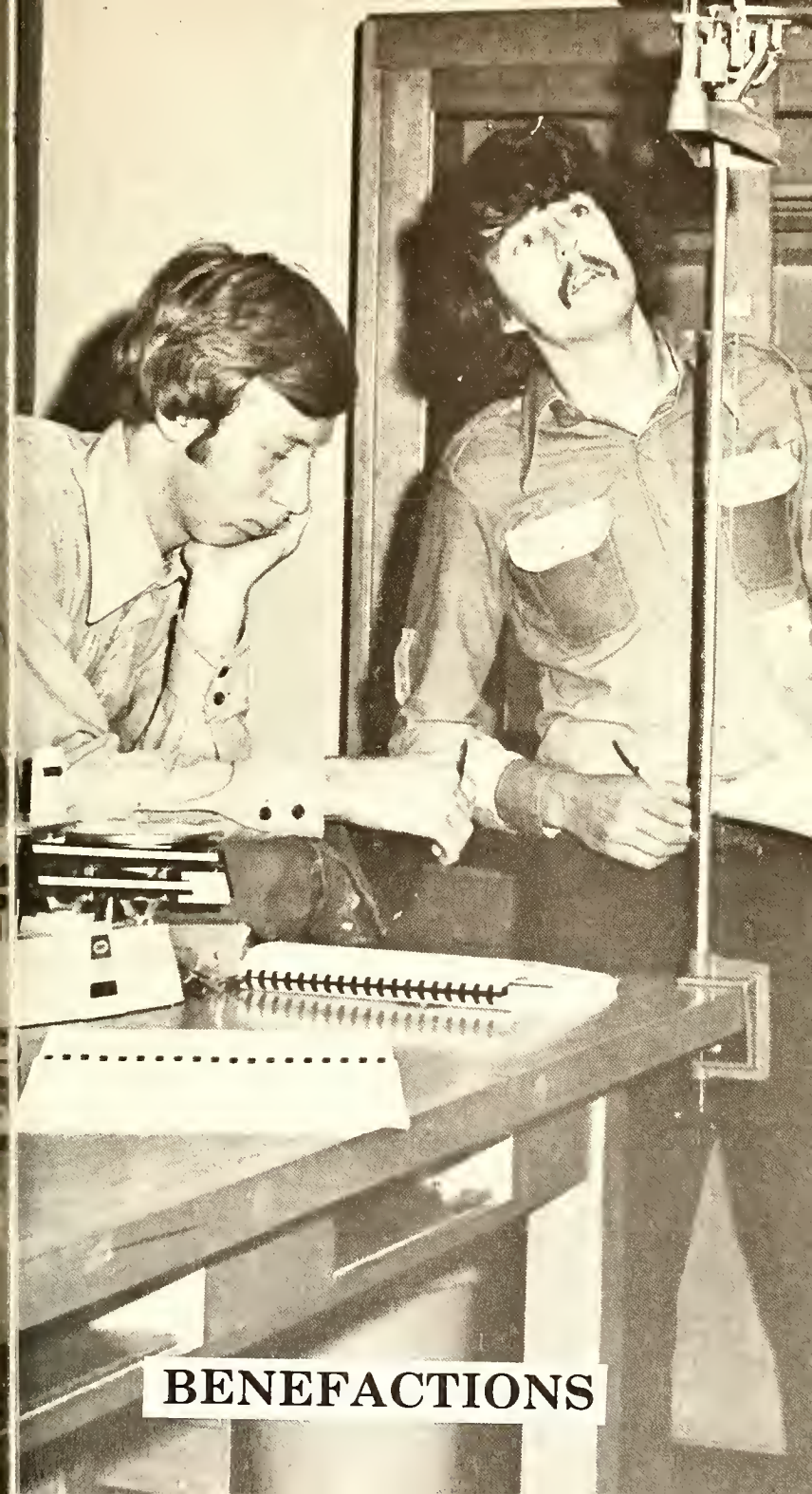
FOUNDATIONS IN SOCIAL WELFARE POLICY. Examination of the concept of social welfare as a social institution. Attention is given to income maintenance programs, health programs, poverty, discrimination, and social welfare programs in other countries.

SOC 495. DIRECTED INDIVIDUAL STUDY. (1-4) Prerequisite: consent of the department. Supervised investigation of a sociological problem of special interest to the student. May be repeated for credit.

SOC 510. INTERGROUP RELATIONS. (3) Prerequisite: introductory sociology or consent of the instructor. Analysis of the social and social-psychological determinants of intergroup relations through an examination of labor-management relations, race relations, relations between social classes, ethnic, national, and religious groups, and other major social groupings in contemporary societies. Attention will be given to processes which introduce change in patterns of relations.

SOC 557. ADVANCED GENERAL SOCIOLOGY I: SOCIAL STRUCTURE. (3) Prerequisite: consent of the department. Systematic examination of theories and principles of social structure and organization with special emphasis on role and systems analysis and the segmentation and integration of society.

SOC 558. ADVANCED GENERAL SOCIOLOGY II: SOCIOCULTURAL CHANGE. (3) Prerequisite: consent of the department. Systematic examination of the principal theories and principles of sociocultural change with special emphasis on the evolutionary development of societal types, industrialization and urbanization of American society, and transition of developing countries.



BENEFACTIONS

PROFESSORSHIPS

The *American Credit Corporation Professorships in Business Administration* were established by the American Credit Foundation of North Carolina, Inc. The Foundation approved a statement of intent in January, 1967 to contribute $100,000 to be paid over a period of 10 years and to be used for the presentation of a salary supplement or supplements to a distinguished member or members of the faculty of the College of Business Administration, who will be known as *American Credit Corporation Professors of Business Administration.*

The *Robert Lee Bailey Professorship in History* was UNCC's first professorship, established in December, 1965 by Mr. and Mrs. Sanford V. Davenport to honor and reward excellence in teaching by a gift in memory of her brother, Lieutenant Robert Lee Bailey of the 10th Armored Division of the U.S. Army, who was killed in Germany on March 22, 1945, near the end of the conflict in Europe. Born on April 21, 1914, in Concord, he attended Davidson College, and before the war was associated with Broyhill Furniture Company.

The *Celanese Professor of Engineering* is a distinguished professorship in the College of Engineering, which has its salary supplemented by part of the income from the rental of a building donated by the Celanese Corporation and valued at more than $1 million.

The *Charles E. Cullen Professorship* was established in 1973 by the Charlotte Sales and Marketing Executives, Inc. to honor the late "Charlie" Cullen of Charlotte. The professorship consists of an endowment in the amount of $100,000 pledged by Charlotte Sales and Marketing Executives, Inc. The income from the endowment is to provide a salary supplement or supplements for a distinguished professor of marketing in the College of Business Administration.

The *Rush S. Dickson Professorships in Finance* were established in memory of the late Rush S. Dickson of Charlotte. The professorships are made possible through the generous gifts and pledges, totaling $100,000 by the Dickson Foundation of Mount Holly and the Rush S. Dickson Family Foundation of Charlotte. Mr. Dickson established both foundations. The net income from the gifts is used for the payment of a salary supplement or supplements to a distinguished member or members of the faculty of the College of Business Administration in the field of finance.

The *Frank Porter Graham Professorship in Black Studies* was established by Miss Alice Lindsay Tate in honor of the former president of the University of North Carolina, United States senator and United Nations mediator. The income from the professorship fund will be used as a salary supplement to a distinguished member or members of the faculty of the University of North Carolina at Charlotte.

The *Artie Sue Kerley Professorship in Nursing* was established in 1972 by Miss Artie Sue Kerley to provide a salary supplement for a distinguished member of the College of Nursing faculty.

The *Charles H. Stone Fund* was given by Mrs. Stone in memory of her husband, a pioneer in the chemical and dyestuff industry in the South. The grant is dedicated to perpetuating the memory of Mr. Stone and assuring the high quality of chemistry instruction at the University of North Carolina at Charlotte. The net income is used for the payment of a salary supplement to a distinguished member or members of the chemistry faculty, who are designated as "Charles H. Stone Professors of Chemistry." Before World War I, Mr. Stone was employed by a German chemical company, and later he formed his own company in Charlotte and operated it until 1937 when it was purchased by American Cyanamid Company. Mr. Stone remained active with the company until his retirement in 1947. He died October 20, 1963.

NCNB AWARDS

The generosity of the North Carolina National Bank has made possible the NCNB Awards established for the purpose of recognizing and honoring members of the faculty for distinguished service. The NCNB Awards initially are used to reward excellence in teaching by members of the faculty or to honor faculty members for distinguished research and scholarly writing or devoted and sacrificial service to the University and to mankind.

THE FOUNDATION OF THE UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE

The Foundation of the University of North Carolina at Charlotte was founded in 1960 and has had from its inception the goal of undergirding the University and assisting it in the quest for excellence. To accomplish its goals, the Foundation invites private sources to contribute so that needs unmet, or inadequately provided for through state funds, may be met. The Celanese Corporation of America and the Celanese Fibers Company presented a gift in July, 1963, of a manufacturing plant at Burlington, North Carolina, valued at $1,150,000. The income derived from the rental of this plant is used to supplement the salaries of members of the faculty who teach chemistry, engineering, mathematics, physics and related subjects.

Through the 1975-76 academic year, the Directors of the UNCC Foundation have allocated $900,000 to the University for salary supplements, faculty research, scholarships and special projects.

Patrons of Excellence is a program established by the Foundation of the University of North Carolina at Charlotte, with the primary initial objective of supplementing the salaries of distinguished faculty members. Under the program *Patrons* pledge a minimum of $1,000 a year for a number of 10 years or may make a donation of at least $10,000 at one time. *Patrons of Excellence* now number 180. The Foundation continues to seek additional *Patrons*.

UNIVERSITY REGULATIONS

THE EXPECTATION OF THE UNIVERSITY

The University expects from its students a decent respect for other human beings, a regard for the law and a willingness to embrace membership in an academic community.

Some regulations are always necessary in a society of men and women. It is the intent of the University to keep the number of such regulations at a minimum and to depend rather upon the acceptance on the part of each individual of his responsibility as a member of the University.

POLICIES, PROCEDURES, AND DISCIPLINARY ACTIONS IN CASES OF DISRUPTION OF EDUCATIONAL PROCESS

The policies, procedures and disciplinary actions which will be followed in cases of disruption of the educational process are set forth in the following statement:

Section 1. Policies Relating to Disruptive Conduct

The University of North Carolina has long honored the right of free discussion and expression, peaceful picketing and demonstrations, the right to petition and peaceably to assemble. That these rights are a part of the fabric of this institution is not questioned. They must remain secure. It is equally clear, however, that, in a community of learning, willful disruption of the educational process, destruction of property, and interference with the rights of other members of the community cannot be tolerated. Accordingly, it shall be the policy of the University to deal with any such disruption, destruction or interference promptly and effectively, but also fairly and impartially without regard to race, religion, sex or political beliefs.

Section 2. Definition of Disruptive Conduct

(a) Any faculty member (the term "faculty member," wherever used in this statement, shall include regular faculty members, full-time instructors, lecturers and all other persons exempt from the North Carolina State Personnel System [Chapter 126 of the General Statutes as amended] who receive compensation for teaching, or other instructional functions, or research at the University), any graduate student engaged in the instructional program, or any student who, with the intent to obstruct or disrupt any normal operation or function of the University or any of its component institutions, engages, or incites others to engage, in individual or collective conduct which destroys or significantly damages any University property, or which impairs or threatens impairment of the physical well-being of any member of the University community, or which, because of its violent, forceful threatening or intimidating nature or because it restrains freedom of lawful movement, otherwise prevents any member of the University community from conducting his normal activities within the University, shall be subject to

prompt and appropriate disciplinary action, which may include suspension, explusion, discharge or dismissal from the University.

The following, while not intended to be exclusive, illustrate the offenses encompassed herein, when done for the purpose of obstructing or disrupting any normal operation or function of the University or any of its component institutions: (1) occupation of any University building or part thereof with intent to deprive others of its normal use; (2) blocking the entrance or exit of any University building or corridor or room therein with intent to deprive others of lawful access to or from, or use of, said buiiding or corridor or room; (3) setting fire to or by any other means destroying or substantially damaging any University building or property, or the property of others on University premises; (4) any possession or display of, or attempt or threat to use, for any unlawful purpose, any weapon, dangerous instrument, explosive, or inflammable material in any University building or on any University campus; (5) prevention of, or attempt to prevent by physical act, the attending, convening, continuation or orderly conduct of any University class or activity or of any lawful meeting or assembly in any University building or on any University campus; and (6) blocking normal pedestrian or vehicular traffic on or into any University campus.

(b) Any person engaged in the instructional program who fails or refuses to carry out validly assigned duties, with the intent to obstruct or disrupt any normal operation or function of the University or any of its component institutions, shall be subject to prompt and appropriate disciplinary action under this policy if (but only if) his status is such that he is not subject to the provisions of any trustee or Board of Governors policies governing suspension and discharge of faculty members.

(a) When any chancellor has cause to believe that any of the provisions of this policy have been violated, he shall forthwith investigate or cause to be investigated the occurrence, and upon identification of the parties involved shall promptly determine whether any charge is to be made with respect thereto.

(b) If he decides that a charge is to be made, he shall, within thirty (30) days after he has information as to the identity of the alleged perpetrator of the offense but in no event more than twelve (12) months after the occurrence of the alleged offense, (i) refer the case to the appropriate existing University judicial body, or (ii) refer the matter to a Hearing Committee drawn from a previously selected Hearings Panel which, under this option, is required to implement action for violation of Section 2(a) or (b) of this statement. If the case is referred to an existing University judicial body under (i) above, the procedural rules of that body shall be followed, and subsections (c) through (f) below shall not be applicable. If the matter is referred to a Hearing Committee under (ii) above, the procedural rules prescribed in subsection (c) through (f) below shall be followed.

(c) The accused shall be given written notice by personal service or registered mail, return receipt requested, stating:

(1) The specific violations of this policy with which the accused is charged.

(2) The designated time and place of the hearing on the charge by the Hearing Committee, which time shall be not earlier than seven (7) nor later than ten (10) days following receipt of the notice.

(3) That the accused shall be entitled to the presumption of innocence until found guilty, the right to retain counsel, the right to present the testimony of witnesses and other evidence, the right to cross-examine all witnesses against him, the right to examine all documents and demonstrative evidence adverse to him, and the right to a transcript of the proceedings of the hearing.

(d) The Hearing Committee shall determine the guilt or innocence of the accused. If the person charged is found guilty, the Hearing Committee shall recommend to the chancellor such discipline as said body determines to be appropriate. After considering such recommendation the chancellor shall prescribe such discipline as he deems proper. In any event, whether the person is found guilty or not guilty, a written report shall be made by the chancellor to the president within ten (10) days.

(e) Any person found guilty shall have ten (10) days after notice of such finding in which to appeal to the president of the University. Such an appeal if taken shall be upon the grounds set forth in Section 5.

(f) Any accused person who, without good cause, shall fail to appear at the time and place fixed for the hearing of his cause by the Hearing Committee shall be suspended indefinitely or discharged from University employment.

(g) A chancellor, unless so ordered or otherwise prevented by court, shall not be precluded from carrying out his duties under this policy by reason of any pending action in any state or federal court. Should a delay occur in prosecuting the charge against the accused because the accused or witnesses that may be necessary to a determination of the charge are involved in state or federal court actions, the time limitations set forth above in this Section 3 shall not apply.

(h) Conviction in any state or federal court shall not preclude the University or any of its officers from exercising disciplinary action in any offense referred to in this policy.

(i) Nothing contained in this policy shall preclude the president or any chancellor from taking any other steps, including injunctive relief or other legal action, which he may deem advisable to protect the best interests of the University.

Section 4. Aggravated Acts or Threatened Repetition of Acts

(a) The chancellor of each of the component institutions of the University shall appoint an Emergency Consultative Panel which shall be composed of not less than three (3) nor more than five (5) faculty members and not less than three (3) nor more than five (5) students who shall be available to advise with the chancellor in any emergency. No member of such panel shall serve for more than one (1) year unless he be reappointed by the chancellor. The chancellor may make appointments, either temporary or for a full year, to fill any vacancies which may exist on the panel.

(b) If, in the judgment of the chancellor, there is clear and convincing evidence that a person has committed any of the acts prohibited under this policy which, because of the aggravated character or probable repetition of such act or acts, necessitates immediate action to protect the University from substantial interference with any of its orderly operations or functions or to prevent threats to or acts which endanger life or property, the chancellor, with the concurrence as hereinafter provided of the Emergency Consultative Panel established pursuant to (a) above, may forthwith suspend such person from the University and bar him from the University campus; provided, however, that in the event of such suspension, the person suspended shall be given written notice of the reason for his suspension, either personally or by registered mail addressed to his last known addresses, and shall be afforded a prompt hearing, which, if requested, shall be commenced within ten (10) days of the suspension. Except for purposes of attending personally any hearings conducted under this policy, the bar against the appearance of the accused on the University campus shall remain in effect until final judgment has been rendered in his case and all appellant proceedings have been concluded, unless such restriction is earlier lifted by written notice from the chancellor.

(c) A quorum of the Emergency Consultative Panel provided for in (a) above shall consist of not less than four (4) of its members, and the required concurrence shall have been obtained if a majority of such quorum shall indicate their concurrence. The chancellor shall meet personally with members of such panel at the time he seeks concurrence, if it is feasible to do so. However, if the circumstances are such that the chancellor deems it not to be feasible to personally assemble such members, then he may communicate with them or the required number of them individually by telephone or by such other means as he may choose to employ, in which event he may proceed as provided in (b) above after the required majority of such members have communicated their concurrence to him.

(d) In the chancellor's absence or inability to act, the president may exercise the powers of the chancellor specified in this section in the same manner and to the same extent as could the chancellor but for such absence or inability to act.

Section 5. Right of Appeal

Any person found guilty of violating the provisions of this policy by the Hearing Committee referred to in Section 3 shall have the right to appeal the finding and the discipline imposed upon him to the president of the University. Any such appeal shall be in writing, shall be based solely upon the record, and shall be limited to one or more of the following grounds.

(1) That the finding is not supported by substantial evidence;

(2) That a fair hearing was not accorded the accused; or

(3) That the discipline imposed was excessive or inappropriate.

It shall be the responsibility of the president to make prompt disposition of all such appeals, and his decision shall be rendered within thirty (30) days after receipt of the complete record on appeal.

Section 6. No Amnesty

No administrative official, faculty member, or student of the University shall have authority to grant amnesty or to make any promise as to prosecution or non-prosecution in any court, state or federal, or before any student, faculty, administrative, or trustee committee to any person charged with or suspected of violating Section 2 (a) or (b).

Section 7. Publication

The provisions of this policy shall be given wide dissemination in such manner as the president or chancellors may deem advisable, and shall be printed in the official catalogs which may be issued by each component institution of the University.

FIREARMS AND OTHER WEAPONS PROHIBITED

An act to protect persons on the property of any public or private educational institution from persons carrying firearms or other weapons was enacted by the 1971 General Assembly. This act, which is in full force and effect on the UNCC campus, is as follows:

It shall be unlawful for any person to possess, or carry, whether openly or concealed, any gun, rifle, pistol, dynamite cartridge, bomb, grenade, mine, powerful explosive as defined in G.S. 14-284.1, bowie knife, dirk, dagger, slung shot, leaded cane, switch-blade knife, blackjack, metallic knuckles or any other weapon of like kind, not used solely for instructional or school-sanctioned ceremonial purposes, in any public or private school building or bus, on any public or private school campus, grounds, recreation area, athletic field, or other property owned, used or operated by any board of education, school, college, or university board of trustees or directors for the administration of any public or private educational institution. For the purpose of this section, a self-opening or switch-

blade knife is defined as a knife containing a blade or blades which open automatically by the release of a spring or a similar contrivance, and the above phrase "weapon of like kind" includes razors and razor blades (except solely for personal shaving) and any sharp pointed or edged instrument except unaltered nail files and clips and tools used solely for preparation of food, instruction and maintenance. This section shall not apply to the following persons: officers and enlisted personnel of the armed forces of the United States when in discharge of their official duties as such and acting under orders requiring them to carry arms or weapons, civil officers of the United States while in the discharge of their official duties, officers and soldiers of the militia and the national guard when called into actual service, officers of the state, or of any county, city, or town, charged with the execution of the laws of the state, when acting in the discharge of their official duties, any pupils who are members of the Reserve Officer Training Corps and who are required to carry arms or weapons in the discharge of their official class duties, and any private police employed by the administration or board of trustees of any public or private institution of higher education when acting in the discharge of their duties.

Any person violating the provisions of this Act shall be guilty of a misdemeanor and upon conviction shall be punished in the discretion of the court by fine or imprisonment or by both such fine and imprisonment, not to exceed five hundred dollars ($500) fine or six months' imprisonment.

ALCOHOLIC BEVERAGES

State law regulates the possession and use of alcoholic beverages. Excessive and/or inappropriate uses, as defined by state law, are punishable by criminal penalty. Also, because the University community presents a separate and special context in which an environment compatible with academic endeavors must be preserved, additional University regulation of the possession and use of alcoholic beverages on campus is necessary and proper.

It shall be the responsibility of the chancellor or his delegate to adopt and enforce regulations covering the possession and use of alcoholic beverages on the campus of the University.

DRUG ABUSE

The illicit and improper use of certain drugs (for example, cannabis, amphetamines, barbiturates, opiates and hallucinogenic drugs) is incompatible with personal welfare and the pursuit of academic excellence and will not be tolerated by the University. Furthermore, the illicit possession or transfer of these drugs is a state and/or federal offense, and the University will cooperate fully with appropriate authorities in the enforcement of the law.

The fundamental concern and responsibility of the University relative to the abuser of drugs is constructive rehabilitation. Within the limitations imposed by law, (Chapter 90, Section 111.3, and Section 113.6, Narcotic Drug Act, for example) the University will promote a program of education and encourage medical consultation in order to meet this responsibility. But it will act firmly through formal disciplinary procedures to control drug abuse in those instances where these measures prove insufficient.

Disciplinary action relative to drug abuse in the University will be administered by the University Discipline Committee.

DIRECTORY

THE UNIVERSITY OF NORTH CAROLINA

Sixteen Constituent Institutions

WILLIAM CLYDE FRIDAY, B.S., LL.B., LL.D., President
RAYMOND HOWARD DAWSON, B.A., MA.A., Ph.D., Vice President - Academic Affairs
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John Eveleth Wrigley, *Acting Chairman, Department of History, and Professor of History,* A.B., M.A., St. Charles Seminary; M.A., Ph.D., University of Pennsylvania

William David Wubben, *Professor of Economics and Business Administration,* B.Ph., M.B.A., University of Chicago; Ph.D., The Claremont Graduate School

Patricia Suzanne Yaros, *Visiting Assistant Professor of Nursing,* A.A., University of South Florida; B.S.N., M.N., University of Florida

Curtis James John Young, *Assistant Professor of Civil Engineering Technology,* B.S.C.E., M.E.C.E., Rensselaer Polytechnic Institute; P.E.

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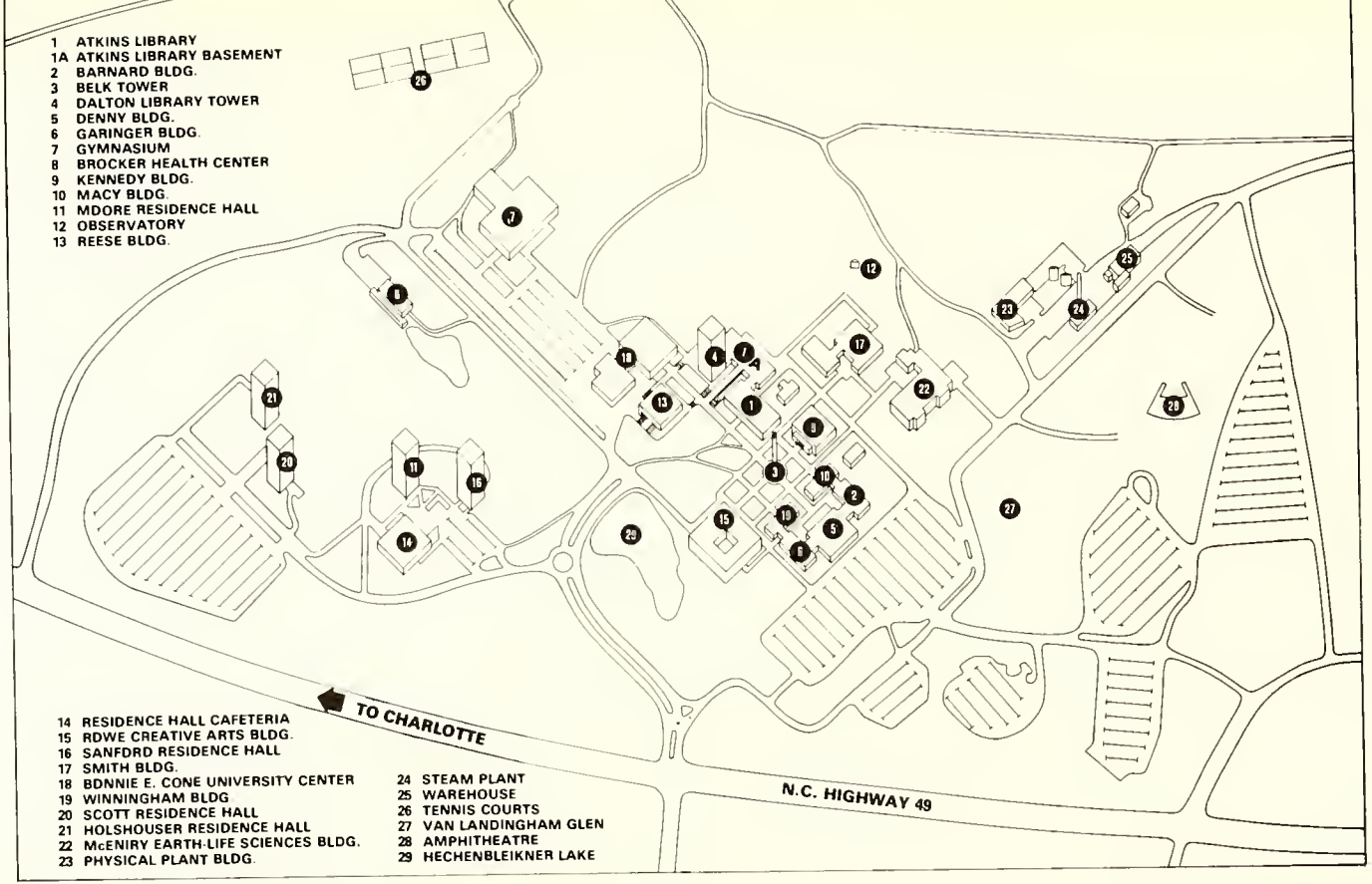
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7 GYMNASIUM
8 BROCKER HEALTH CENTER
9 KENNEDY BLDG.
10 MACY BLDG.
11 MDORE RESIDENCE HALL
12 OBSERVATORY
13 REESE BLDG.
14 RESIDENCE HALL CAFETERIA
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17 SMITH BLDG.
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25 WAREHOUSE
26 TENNIS COURTS
27 VAN LANDINGHAM GLEN
28 AMPHITHEATRE
29 HECHENBLEIKNER LAKE
TO CHARLOTTE
N.C. HIGHWAY 49

THE UNIVERSITY OF NORTH CAROLINA
AT CHARLOTTE
UNCC STATION
CHARLOTTE, NORTH CAROLINA 28223

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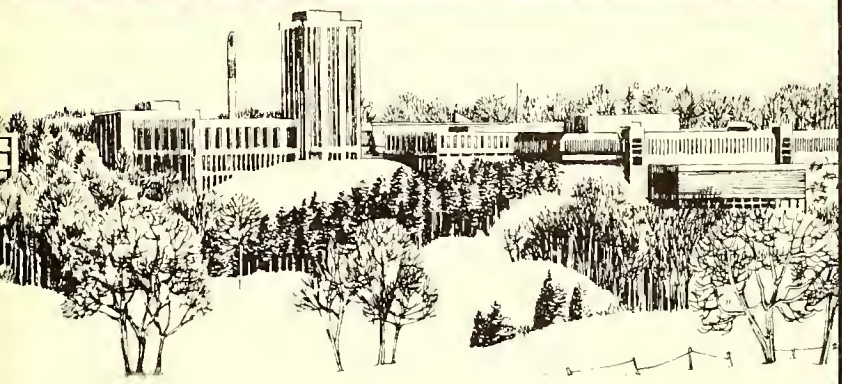

UNDERGRADUATE CATALOG 1978-79

The University of North Carolina at Charlotte

UNCC

Correspondence Directory

If, after reading this Catalog, you have further questions, or wish to make specific inquiries about the programs of, or admission to, the University of North Carolina at Charlotte, please look below to find the proper office to contact.

ADMISSIONS

If you need information on admissions policies, application forms, or wish to make an appointment for an interview, please write to one of the following:

Director of Freshman Admissions
The University of North Carolina
at Charlotte
UNCC Station
Charlotte, North Carolina 28223
AC 704/597-2211

Director of Transfer Admissions
The University of North Carolina
at Charlotte
UNCC Station
Charlotte, North Carolina 28223
AC 704/597-2212

STUDENT AID

If you need information on scholarships, work grants or loans, please write to:

Director of Student Financial Aid
The University of North Carolina at Charlotte
UNCC Station
Charlotte, North Carolina 28223
AC 704/597-2461

CAMPUS HOUSING

If you have questions concerning housing on campus, please write to:

Director of Residence Life
The University of North Carolina at Charlotte
UNCC Station
Charlotte, North Carolina 28223
AC 704/597-2263

REFUNDS

If you have questions concerning the University's refund policy, please write to:

Controller
The University of North Carolina at Charlotte
UNCC Station
Charlotte, North Carolina 28223
AC 704/597-2102

RETENTION

If you have questions concerning student retention, please write to:

Director of Planning and University Studies
The University of North Carolina at Charlotte
UNCC Station
Charlotte, North Carolina 28223
AC 704/597-2431

GENERAL INFORMATION

If you have questions about the University which do not concern any of the areas above, please write to:

Director of Information
The University of North Carolina at Charlotte
UNCC Station
Charlotte, North Carolina 28223
AC 704/597-2271

THE UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE

UNDERGRADUATE CATALOG 1978-79 VOL. XIV, NO. 1

The information which appears in this catalog was effective as of October 1, 1977.

Cover design by Josette Arrey
Photos by Gayle Petrakis

The University of North Carolina at Charlotte is an equal opportunity institution and subscribes to all requirements of federal law not to discriminate with respect to students, employees or applicants on the basis of sex, race, color, national origin, religion, handicapped status, age or veteran status.

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THE UNIVERSITY

The University of North Carolina at Charlotte is a young and growing institution located minutes north of the largest urban center in the Carolinas, a city of more than 300,000.

Enrollment at UNCC for the 1977-78 academic year was 8,504 and reflected a growth of 8.8 per cent over the previous year.

Four high rise residence halls on campus house approximately 2,000 students. More than 6,500 students commute from Charlotte and the surrounding area.

The campus covers approximately 1,000 acres of rolling hills with forests, streams and ponds. Contemporary buildings are clustered at the central campus, which is easily accessible via major highways.

The University was created by the 1965 North Carolina General Assembly, which transformed Charlotte College into a campus of the University of North Carolina. The institution, now one of 16 campuses of the University of North Carolina System, can trace its lineage to 1946 and the Charlotte Center of the University of North Carolina.

A team of a chancellor, four vice chancellors and eight deans give leadership to the University and its eight colleges. Classes are taught by outstanding educators, basically young and highly motivated.

UNCC offers the degrees of Bachelor of Arts, Bachelor of Architecture, Bachelor of Science, Bachelor of Creative Arts, Bachelor of Science in Engineering, Bachelor of Engineering Technology, Master of Science in biology and chemistry, Master of Arts in Education, Master of Education, Master of Arts in geography, mathematics, English and history, Master of Business Administration and a Master of Urban Administration.

PURPOSE

No formal statement of purpose has been adopted at UNCC in order to provide an atmosphere in which the University has freedom to grow and develop, but several principles have been agreed upon.

These principles include the decision to give first priority to undergraduate teaching and to provide graduate instruction and research opportunities in the basic natural sciences, the social sciences, the humanities, the fine arts, teacher education and certain professional areas.

The University is also dedicated to involve itself in intellectual and cultural exchange with the immediate community and the state of North Carolina.

In order not to limit its horizons to the boundary of the county, state or nation, however, the University emphasizes international issues, realizing that much of learning is international in origin and scope.

UNCC is committed to the concept of lifelong learning and provides opportunities for enrichment and renewal to members of the public in addition to those enrolled in degree and credit programs.

In its relationship with students, faculty, staff, alumni and the public, the University treats each person as an individual, respecting differences and guaranteeing individual rights of citizenship.

ACCREDITATION

UNCC is accredited, as a total institution, by the Southern Association of Colleges and Schools and also by the North Carolina Association of Colleges and Universities. Various programs within the University structure are accredited by the appropriate specialized accrediting agencies, including programs within the College of Engineering by the Engineers' Council for Professional Development, the College of Nursing by the National League for Nursing, and the Department of Chemistry by the American Chemical Society. The University's program for teacher education is approved for teacher certification by the North Carolina State Department of Education; the nursing program is approved by the North Carolina Board of Nursing.

EDUCATIONAL STRUCTURE

Each of the University's colleges deals with one or more academic areas to offer students more than 40 undergraduate degree options in 26 departments. The colleges are Architecture, Business Administration, Engineering, Human Development and Learning, Humanities, Nursing, Science and Mathematics, and Social and Behavioral Sciences. The departments within the colleges are listed with the colleges in the "Courses of Study" section of this catalog.

THE CATALOG

The *Catalog* is not an irrevocable contract. Regulations within it are subject to change by the University at any time. University regulations are policy statements to guide students, faculty and administrative officers in achieving the goals of the institution. Necessary interpretations of these policies will be made by the appropriate authorities with the interests of the students and the institution in mind. Students are encouraged to seek information as they require it about the application of any policy.

EQUAL OPPORTUNITY

The University of North Carolina at Charlotte is dedicated to equality of opportunity within the University community. Discrimination based on sex, race, color, national origin, religion, age, handicapped or veteran status is not condoned and shall not be practiced against students, employees, or applicants.

Further, the University of North Carolina at Charlotte supports the protections available to members of the University community under all applicable federal laws, including Title VI and VII of the Civil Rights Act, Title IX of the Educational Amendments, Sections 799A and 845 of the Public Health Service Act, the Equal Pay and Age Discrimination Acts, the Rehabilitation Act of 1973, and Executive Order 11246.

The University has a published Affirmative Action and Equal Opportunity Plan. It has completed a self-evaluation of current policies and procedures to insure compliance with the requirements of Title IX of the Educational Amendments of 1972 and it has completed the compliance report required by Section 504 of the Rehabilitation Act of 1973. Copies of these documents have been placed on reserve in the UNCC library.

Both informal and formal grievance procedures have been established for use by any member of the University community who feels discrimination by any segment of the University.

Additional information with respect to these programs may be obtained from:

William Steimer—Affirmative Action Officer
Room 221 Reese
Telephone 704/597-2204

Donald Currie—Title IX Responsible Employee
Room 013 Atkins
Telephone 704/597-2275

Rebecca Whitener—Coordinator, Handicapped Services
Room 001 Reese
Telephone 704/597-2449

UNDERGRADUATE STUDENT RETENTION AT UNCC, 1974-1976

	Black		*American Indian or Alaskan Native*		*Asian or Pacific Islander*		*Hispanic*		*All Other*		*Total*		*Grand Total*
Fall 1974 to Fall 1975	M	F	M	F	M	F	M	F	M	F	M	F	
Total enrolled, Fall 1974	144	125	8	1	5	3	14	3	3,094	2,234	3,265	2,366	5,631
No. of students still enrolled or graduated, Fall 1975	102	91	5	1	4	0	6	2	2,327	1,637	2,444	1,731	4,175
% of returning or graduated students to total enrolled	71	73	63	100	80	0	43	67	75	73	75	73	74
Fall 1975 to Fall 1976													
Total enrolled, Fall 1975	183	165	3	0	5	2	16	7	3,509	2,373	3,716	2,547	6,263
No. of students still enrolled or graduated, Fall, 1976	129	126	3	0	4	0	13	2	2,598	1,789	2,747	1,917	4,664
% of returning or graduated students to total enrolled	70	76	100	—	80	0	81	29	74	75	74	75	74

UNDERGRADUATES GRADUATING FROM UNCC, 1975-1977

Department	Accounting	Architecture	Biology	Business Admin.	Chemistry	Creative Arts	Criminal Justice	Economics	Engineering Analysis and Design	Engineering Science Mechanics & Materials	Engineering Technology	English
1974-75												
No. of majors enrolled Fall, 1974	380	207	300	513	100	233	108	47	115	44	137	374
No. of graduates Spring, 1975	65	13	52	134	14	50	20	12	22	3	33	116
% of majors graduating	17	6	17	26	14	21	19	26	19	7	24	31

								10	12	15	32	
1976-77												
No. of majors enrolled Fall, 1976	529	223	351	690	103	152	219	74	150	74	244	288
No. of graduates Spring, 1977	94	48	48	155	22	35	47	21	22	10	48	106
% of majors graduating	18	22	14	22	21	23	21	28	15	14	20	37

**Approval for this program was not received until Spring of 1976 so majors were not coded into this area in Fall of 1975.*

	Foreign Languages	Geography and Earth Science	History	Human Development and Learning	Mathematics	Nursing	Philosophy	Physics	Political Science	Psychology	Religious Studies	Sociology	Urban & Environmental Engineering
1974-75													
No. of majors enrolled Fall, 1974	72	66	284	—	153	323	26	14	238	414	40	257	74
No. of graduates Spring, 1975	19	23	89	—	17	68	1	2	44	109	17	69	16
% of majors graduating	26	35	31	—	11	21	4	14	18	26	43	27	22
1975-76													
No. of majors enrolled Fall, 1975	56	77	283	*	139	400	27	22	238	481	44	227	99
No. of graduates Spring, 1976	13	33	123	1	35	66	6	1	68	124	20	72	8
% of majors graduating	23	43	43	—	25	17	22	5	29	26	45	32	8
1976-77													
No. of majors enrolled Fall, 1976	53	91	199	175	159	425	25	27	230	438	38	205	122
No. of graduates Spring, 1977	13	28	88	4	20	66	6	4	50	120	10	58	17
% of majors graduating	25	31	44	2	13	16	24	15	22	27	26	28	14

PRIVACY OF EDUCATIONAL RECORDS

Access to student educational records is regulated by the Family Educational Rights and Privacy Act of 1974. This Act, with which the institution intends to comply fully, was designated to protect the privacy of education records, to establish the right of students to inspect and review their education records and to provide guidelines for the correction of inaccurate or misleading data through informal and formal hearings. Students also have the right to file complaints with The Family Educational Rights and Privacy Act Office (FERPA) concerning alleged failures by the institution to comply with the Act.

Local policy explains in detail the procedures to be used by the institution for compliance with the provisions of the Act. Copies of the policy can be found in the following offices: Vice Chancellor of Academic Affairs, Vice Chancellor of Student Affairs, Dean of Students and Registrar.

The University of North Carolina at Charlotte categorizes the following as Directory Information:

Name, address, telephone number, date of birth, participation in officially recognized activities and sports, weight and height of members of athletic teams, degrees and awards received, dates of attendance, major and class schedule.

Students have the right to withhold disclosure of Directory Information by completing a request for non-disclosure in the Registrar's Office. Requests for non-disclosure must be filed annually. The University of North Carolina at Charlotte assumes that failure on the part of any student to file a request for non-disclosure indicates approval for disclosure.

Questions concerning the Family Educational Rights and Privacy Act may be referred to the Registrar.

EVENING PROGRAM

The University offers a well-rounded evening program consistent with its daytime classes. Students may request any course in the *Catalog*, and if the director finds there is sufficient demand, the courses will be offered. Classes are held from 4 p.m. through 10:30 p.m. The Office of Evening Programs is open from 8:30 a.m. to 5:30 p.m. Monday through Friday. Individuals wishing to contact the director after 5:30 p.m. should telephone for an appointment. Requests for schedules, recommendations for offerings and other information concerning the evening program should be made to the Director of the Evening Program, University of North Carolina at Charlotte, UNCC Station, Charlotte, N.C. 28223.

APPLICATION DATES

Students interested in enrolling at UNCC should consult the schedule below for application dates. However, because of the number of applications received due to rapid growth, the University may be required to announce cutoff dates for applications which are earlier than those in the schedule.

Term of Entry	*Application Must Be Filed By*	*Application Must Be Completed By*
First Summer Term	May 1	May 15
Second Summer Term	June 15	July 1
Fall Semester	July 1	July 15
Spring Semester	December 1	December 15
First Summer Term	May 1	May 15
Second Summer Term	June 15	July 1

ACADEMIC CALENDAR

First Summer Session, 1978

May 29	Mon.	Residence halls open
May 29	Mon.	Registration
May 30	Tues.	Classes begin
May 31	Wed.	Last day to register or add a course
June 1	Thurs.	Last day to withdraw from school or drop a course with refund
June 13	Tues.	Last day to drop a course without grade evaluation. Last day for Engineering students to drop a course.
June 28	Wed.	Last day to drop a course
July 3	Mon.	Last day of classes
July 4	Tues.	No classes
July 5-6	Wed.-Thurs.	Final examinations

Second Summer Session, 1978

July 10	Mon.	Registration
July 11	Tues.	First day of classes
July 12	Wed.	Last day to register or add a course
July 13	Thurs.	Last day to withdraw from school or drop a course with refund
July 24	Mon.	Last day to drop a course without grade evaluation. Last day for Engineering students to drop a course.
Aug. 9	Wed.	Last day to drop a course
Aug. 11	Fri.	Last day of classes
Aug. 14-15	Mon.-Tues.	Final examinations

Short Session, 1978

June 19	Mon.	Registration
June 20	Tues.	Classes begin. Last day to register
June 21	Wed.	Last day to withdraw from school or drop a course with refund
June 23	Fri.	Last day to drop without grade evaluation. Last day for Engineering students to drop a course.
June 24	Sat.	Classes meet
July 4	Tues.	No classes
July 5	Wed.	Last day to drop a course
July 7	Fri.	Last day of classes and/or final examinations

Eight-Week Session, 1978

June 19	Mon.	Registration
June 20	Tues.	Classes begin
June 21	Wed.	Last day to register or add a course
June 23	Fri.	Last day to withdraw from school or drop a course with refund
July 4	Tues.	No classes
July 6	Thurs.	Last day to drop a course without grade evaluation. Last day for Engineering students to drop a course.
Aug. 8	Tues.	Last day to drop a course
Aug. 11	Fri.	Last day of classes
Aug. 14-15	Mon.-Tues.	Final examinations

Fall Semester, 1978

Aug. 20	Sun.	Residence halls open for new students only Orientation begins.
Aug. 21	Mon.	Faculty and staff convocation
Aug. 21-22	Mon.-Tue.	Orientation continues and advising begins
Aug. 22	Tue.	Residence halls open for continuing students
Aug. 23-25	Wed.-Fri.	Registration and advising
Aug. 25	Fri.	Last day to register without a late penalty of $10
Aug. 28	Mon.	Classes begin
Sept. 1	Fri.	Last day to register or add a course for credit
Sept. 4	Mon.	Labor day (no classes)
Sept. 8	Fri.	Last day to withdraw (or drop a course) with refund
Oct. 2	Mon.	Last day to file for a December degree
Oct. 9-10	Mon.-Tue.	No classes
Oct. 18	Wed.	Reports of unsatisfactory grades by faculty
Oct. 27	Fri.	Last day to drop a course without grade evaluation. Last day for Engineering students to drop a course
Nov. 6-10	Mon.-Fri.	Early registration for spring semester 1979
Nov. 22-24	Wed.-Fri.	Thanksgiving holidays
Dec. 1	Fri.	Last day to file for a May degree
Dec. 1	Fri.	Last day to drop a course
Dec. 8	Fri.	Last day of classes
Dec. 11	Mon.	Final examinations begin
Dec. 15	Fri.	Final examinations end

Dec. 18	Mon.	All final grades for fall semester due in Registrar's office

Spring Semester, 1979

Jan. 9	Tue.	Residence halls open
Jan. 10-12	Wed.-Fri.	Orientation, advising and regis-
Jan. 12	Fri.	Last day to register without a late penalty of $10
Jan. 15	Mon.	Classes begin
Jan. 19	Fri.	Last day to register or add a course for credit
Jan. 26	Fri.	Last day to withdraw (or drop a course) with refund
March 2	Fri.	Report of unsatisfactory grades by faculty
March 12-16	Mon.-Fri.	Spring holidays
March 21	Wed.	Last day to drop a course without grade evaluation. Last day for Engineering students to drop a course
April 9-13	Mon.-Fri.	Pre-registration for first summer session and early registration for fall semester, 1979
April 20	Fri.	Last day to drop a course
April 27	Fri.	Last day of classes
April 30	Mon.	Reading Day
May 1	Tue.	Last day to file for an August degree
May 1	Tue.	Final examinations begin
May 7	Mon.	Final examinations end
May 8	Tue.	All final grades for spring semester due in Registrar's Office
May 12	Sat.	Commencement Exercises

First Summer Session, 1979

May 28	Mon.	Residence halls open
May 28	Mon.	Registration
May 29	Tues.	Classes begin
May 30	Wed.	Last day to register or add a course for credit
May 31	Thurs.	Last day to withdraw from school or drop a course with refund
June 12	Tues.	Last day to drop a course without grade evaluation. Last day for engineering students to drop a course.
June 29	Fri.	Last day to drop a course
July 3	Tues.	Last day of classes
July 4	Wed.	No classes
July 5-6	Thurs.-Fri.	Final examinations

Second Summer Session, 1979

July 9	Mon.	Registration
July 10	Tues.	Classes begin
July 11	Wed.	Last day to register or add a course for credit
July 12	Thurs.	Last day to withdraw from school or drop a course with refund
July 23	Mon.	Last day to drop a course without grade evaluation. Last day for engineering students to drop a course.
Aug. 8	Wed.	Last day to drop a course.
Aug. 10	Fri.	Last day of classes
Aug. 13-14	Mon.-Tues.	Final examinations

Short Session, 1979

June 18	Mon.	Registration
June 19	Tues.	Classes begin. Last day to register for credit.
June 20	Wed.	Last day to withdraw from school or drop a course with refund
June 22	Fri.	Last day to drop a course without grade evaluation. Last day for engineering students to drop a course.
June 23	Sat.	Classes meet
July 3	Tues.	Last day to drop a course
July 4	Wed.	No classes
July 6	Fri.	Last day of classes and/or final examination

Eight-Week Session, 1979

June 18	Mon.	Registration
June 19	Tues.	Classes begin
June 20	Wed.	Last day to register or add a course for credit
June 22	Fri.	Last day to withdraw from school or drop a course with refund
July 4	Wed.	No classes
July 5	Thurs.	Last day to drop a course without grade evaluation. Last day for engineering students to drop a course.
Aug. 7	Tues.	Last day to drop a course
Aug. 10	Fri.	Last day of classes
Aug. 13-14	Mon.-Tues.	Final examinations

STUDENT ACTIVITIES

Students at the University of North Carolina at Charlotte are encouraged to participate in extracurricular activities. Student Body Government, University Program Board, campus publications, WFAE (the student radio station), are only a few of the activities available which can play a significant role in each student's development and total education. Participation in activities, ranging in type from service and religious to athletic and social and from creative arts and crafts to wilderness experiences, increases a student's opportunities to acquire leadership skills, to experience the responsibilities involved in functioning within a self-governmental process, and to develop personal talents.

STUDENT GOVERNMENT

The Student Body Government provides students an early experience in governmental affairs. Students often find their work in student government a useful background for later public service. The history of student government is as old as the institution itself. The University encourages student participation in its affairs and has student representatives on many of the faculty and administrative committees. The leaders of student government are committed to representing the student body and to developing students' awareness of the many facets of life at their University. All students who are regularly enrolled at UNCC, whether on a part or full-time basis, are entitled to participate in student government.

The University has now developed two forms of campus governance involving students. The University Constitution provides for involvement of student, faculty and administrative officers in a community governance plan. Under this plan, student involvement in policy-making and government of the institution is significant. The principal element of this system is the University Senate in which elected and appointed students, faculty and administrative senators convene for the purpose of recommending to the chancellor such matters as objectives and plans for the University's long-range growth and development, policies for regulating University operations, and procedures for reviewing and appraising budget policies.

The University Court is required to have a minimum of two students among its total number of nine justices. This court entertains jurisdiction over all disputes arising out of a person's relationship to or citizenship with the University, and also serves as a court of appellate review for all lower courts within the University.

The other aspect of campus governance involving student participation relates to the separate composition of a traditional system of student government. At UNCC, Student Body Government comprises:

The Executive Branch made up of the president, his cabinet, various appointees such as the Student Body Treasurer, Attorney General, and Student Legal Counsel, as well as a number of committees appointed by the president.

The Student Legislature, composed of the chairman, the four class presidents, the residence hall presidents, commuter student representatives, representatives chosen by the respective students majoring in the several academic colleges of the University, and graduate student representatives. The chairman of the Student Legislature conducts all meetings and serves as liaison between the Legislature and the president's office.

The Student Judiciary, composed of the Student Superior Court, Residence Courts, the Elections Board, and the Student Legal Counsel. These bodies were established for the purpose of judging violations of the rules and regulations of the University, the student Constitution and the various student statutes, and for administering the Honor Code. This code, adopted by the student body during the fall semester of 1965, reads as follows:

> Under the Honor Code you are on your honor not to cheat, lie, or steal; and if you see another student doing so, you are on your honor to report the individual and the circumstance to the appropriate student agency.

UNIVERSITY PROGRAM BOARD

The Program Board develops, administers and supervises the social, cultural, educational and recreational programs of an all-University nature for the students, faculty and staff. It provides an opportunity for students to participate in activities conducive to personal, social and educational development and tries to directly reflect student needs and interests. These programs include art exhibits, concerts, dances, coffee houses, travel programs, lectures, films and other special activities.

The Program Board consists of the chairperson, vice chairperson, secretary-treasurer, six committee directors, and two members elected at large from the student body. The chairperson and vice chairperson and two at-large members are elected in the annual campuswide spring elections. The directors are selected by an application-interview-election process during spring semester.

STUDENT MEDIA BOARD

The Student Media Board is comprised of student, faculty and administrative staff members, as well as representatives of the various student publications. Its purposes are to promote the objectives of each publication and to guarantee editorial freedom to

the publications within the framework of responsible journalism. The individual media under the Media Board are as follows:

Sanskrit

Sanskrit is a magazine published several times each year by students interested in the arts. Creative work in writing, drawing, photography and other arts is welcomed by the editor. Students are invited to become members of the magazine staff.

Carolina Journal

Students publish a weekly newspaper, *The Carolina Journal*, to cover campus news and provide journalistic experience. Experience on a campus newspaper, together with a broad educational base, often provides the background for a career on a newspaper or a magazine. The campus newspaper provides a vital service to the entire University community by keeping its members informed of issues of common concern and interest.

Rogues 'n Rascals

The yearbook, *Rogues 'n Rascals*, is another publication which provides both a service to the University and an opportunity for student journalists to gain essential skills for later careers. The yearbook is designed to provide a valid picture of the spirit of campus life. It is valued as an organized pictorial record and as an opportunity for creative student journalists to produce a book which is aesthetically pleasing and representative of the student experience at UNCC. A copy of *Rogues 'n Rascals* is provided to all students taking eight or more semester hours of work each semester during the academic year. Others may obtain a copy upon payment of $8.50.

RADIO STATION WFAE

UNCC's Radio Station was established during the 1970-71 academic year in order to provide practical experience to those interested in the field of broadcasting and broadcast journalism and to serve as an instrument for expression by students, faculty, and administration. Achieving FM-Education status during 1976, WFAE is currently a 10-watt FM stereo station with plans for higher power and an expanded broadcast day. It provides educational material, information, and entertainment to the Charlotte-Mecklenburg area.

ATHLETICS

The UNCC 49ers basketball team, 1977 NCAA Mid East Region champions, are a member of the newly formed Sun Belt Conference. Also included in the alignment are Jacksonville University, the University of South Florida, the University of New Orleans, the University of South Alabama and Georgia State University. The 49ers, champions of the inaugural conference championship in 1977,

defended their title in a round robin schedule with conference foes in 1977-78. In addition, they took on such national powers as Florida State, University of Mississippi and the University of Dayton. The 49ers also participated in two holiday tournaments, the First Union Invitational (hosted by UNCC) and the Koa Classic in Billings, Montana.

The University fields men's intercollegiate teams in basketball, tennis, golf, soccer and bowling. Women's teams include basketball, volleyball, tennis, golf, softball and bowling.

UNCC boasts one of the finest physical education facilities in the nation. Designed primarily for the participant, the gymnasium features six indoor basketball courts, an Olympic-size swimming pool, handball and squash courts, weight and wrestling rooms, a well-equipped training room and lockers for 6,000 students and faculty. It will seat 3,200 spectators for basketball and other intercollegiate activities. In addition, the gym houses classrooms and an auditorium for audiovisual presentations.

A comprehensive program for intramural sports is offered to provide enjoyable recreational opportunities for the UNCC student body. The program includes team, dual and individual sports for both men and women, co-recreational activities and ample opportunities for unstructured "free play" activities. The gymnasium is open for student use throughout the week, at night and on weekends.

RELIGIOUS LIFE

The nurture of the human spirit is considered an important part of student services, and many opportunities are given for students of all religious groups to delve deeper into their own roots and to assist the larger community by cooperative enterprises.

The program in religious life is made possible by voluntary contributions from a number of religious groups in Charlotte and throughout North Carolina. It is carried out under the aegis of the United Religious Ministry of UNCC. The director of the URM serves as coordinator of the University religious programs and activities and is available for counseling.

Assisting the director are University chaplains sponsored by denominational and other agencies, who are present for counseling and to assist in residence hall and campus wide programming. Currently, there are six University chaplains, each of whom conducts a ministry in the name of his sponsoring church or churches.

Ministry on campus, however, is the concern of all members of the University community: students, faculty and staff. Some groups are officially recognized student organizations with student officers and faculty advisors. Some have very close student-faculty relationships. Thus, campus ministry offers a wide variety of services: prayer, pastoral and academic counseling, retreats, Bible study, marriage

preparation, discussion groups, access to religious books and periodicals, ecumenical activities, social service and action.

The URM works with all people on campus to share life, teaching, learning and celebration of the human community. The campus ministers and the director of the URM may be contacted through the University telephone exchange, extension 2344. Offices for URM chaplains are located in Sanford and Moore Halls.

CRAFT ARTS CENTER

The Craft Arts Center of Cone University Center offers non-credit fun craft classes, special workshops and open hours for independent crafters. Some of the traditional crafts that the Center can accommodate are: pottery, weaving, stained glass, jewelry, macrame, leathercrafts, silk screening, copper enameling, and batik. The Craft Center sells most craft supplies needed and also runs a poster/sign service for the campus.

VENTURE

Venture started in 1971 as a wilderness education program at UNCC sponsored jointly by the Office of Student Affairs and the College of Social and Behavioral Sciences. Originally an adaptive Outward Bound program, Venture has maintained a close adherence to the OB philosophy while evolving an identity and purpose unique to itself. Venture offers a diverse number of short, non-credit workshops throughout the academic year to provide opportunities for active, experiential learning.

Venture activities may be on vertical rockfaces, in the woods, on mountaintops, in the backcountry on bicycles, on fast-moving rivers, or encountering our urban wilderness. The courses will allow each student a chance to acquire basic skills in these pursuits; but, more important, each person will strive to achieve a level of comfortability through newly developed confidence and competence. Venture programs are designed to facilitate individual growth through physical challenge, group interaction and feedback, and personal reflection.

A typical Venture course will involve a two- or three-hour orientation session during the week followed by the field experience that weekend. Initial canoe and kayak practice is in the UNCC swimming pool. The Charlotte arca is utilized whenever possible, as well as the western Carolina mountains and the sea coast. Venture normally provides all equipment, transportation, and food. Fees for a Venture activity are kept as low as possible to encourage full student participation. All courses have a limited enrollment in order to minimize environmental impact and to facilitate group awareness.

Extended Venture courses are offered for credit during the regular academic year and summer sessions through the College of Social

and Behavioral Sciences. Venture also operates an outdoor equipment rental program out of the Games Room in Cone University Center. Quality gear (packs, tents, sleeping bags, cooksets, etc.) are available on a day, weekend, or weekly basis for a nominal fee. A UNCC I.D. card and a deposit are required.

ORGANIZATIONS

Academic

Alpha Kappa Psi is a national professional fraternity made up of students and faculty of the College of Business Administration. Membership is open to males upon presentation of evidence of satisfactory academic work. Professional and social activities are designed to promote fellowship and professional interest among members.

American Society of Civil Engineers-Student Club was organized for the purpose of meeting with practicing civil engineers, taking field trips, sponsoring civil engineers speakers and participating in Engineering College activities.

American Society of Mechanical Engineers-Student Chapter provides the same opportunities as above for students interested in mechanical engineering.

American Institute of Architects-Student Chapter provides opportunities for professional development of architectural students through contacts with local architects and attendance at local, regional and national conferences.

American Society of Personnel Administration-UNCC Chapter provides opportunity for exposure to the business community through speakers, tours, general rap sessions and monthly dinner meetings with the Charlotte Chapter of ASPA.

Beta Iota Mu, the Biology Club, was formed to increase knowledge and interest in the biological sciences, to utilize professional biologists and students in a process of mutually exploring problems of biology and to stimulate fellowship among students and faculty interested in biological sciences.

The Chemistry Society is open to students with a deep interest in chemistry and is designed to afford opportunity for members to become better acquainted, to secure the intellectual stimulation that arises from professional association and to install a professional pride in chemistry and chemical engineering.

Chez les Français, the French Club, is open to all students interested in the language, customs and culture of the French people. Social and educational meetings are held for the purpose of broadening the members' knowledge of French civilization and increasing their conversational ability in the French language.

El Club Español is open to students interested in fellowship and conversation in Spanish. The meetings are informal and are usually conducted in both Spanish and English. Frequently, Spanish speaking guests talk to members of the club about the Hispanic countries. The students also participate in the presentation of plays, songs, dances and films.

The UNCC German Club was formed in 1972 and currently has about 25 members. Its purpose is to promote interest and participation in all aspects of German culture. To this end, it has, in the past year, sponsored a dramatic group which won first place in the Clemson University Drama Contest. To provide an opportunity in which German language can be practiced informally, the club hosts the Charlottenburger Stammtisch, held bi-weekly either at Gus's or in the Cone University Center. The club also sponsors German films.

The purpose of the *History Club*, founded in 1975, is to develop within interested students an increased individual awareness of the importance of history as a field of study and to create a bond among those students who have chosen history as their major field. Both academic and social functions are used to carry out this purpose.

The Engineers Club was the first organization founded for College of Engineering students. The Engineers Club served as a catalyst for the discipline clubs and produces a forum for interdisciplinary activities which are so important in the world today. The Engineers Club coordinates and produces the annual Engineering Fair.

The Society of Physics Students is open to all students who are interested in developing friendships with other members of the local scientific community. The activities of the society provide an additional medium through which students may advance their knowledge of science.

The Sociology Club was formed to increase awareness of the importance of the sociological perspective for understanding the forces that shape and control our lives. Students and faculty share their ideas and perspectives with each other and other interested persons from the local community through participation in a variety of academic and social functions.

University Chapter of the Student National Education Association, which is affiliated with the North Carolina Education Association, is to inform students of the possibilities offered in the field of education, to encourage qualified students to become teachers and to provide students with an opportunity to discuss educational issues and problems.

The Student Nurse's Association is a national organization open to all students majoring in nursing. The SNA is affiliated with the district, state and national organization and is actively supported by students and faculty of the College of Nursing. Meeting once a month, the SNA endeavors to increase a sense of individual responsibility for creating and maintaining high ideals of nursing students.

Other academic clubs are:

Accounting Club
Geography Club
Institute of Electrical and Electronics Engineers-Student Chapter
Math Club
Philosophy Club
Political Science Club
Student Chapter of the National Art Education Association

Social Fraternities and Sororities

The University has an active and flourishing fraternity and sorority system. Guided by representatives of each fraternity or sorority, the Interfraternity Council and the Panhellenic Society, respectively, guide and coordinate the activities and organizational concerns of their constituents.

The following national fraternities have been chartered for UNCC: Alpha Sigma Phi, Chi Phi, Kappa Alpha Psi, Kappa Sigma, Lambda Chi Alpha, Omega Psi Phi, Pi Kappa Phi and Sigmi Phi Epsilon.

The national sororities affiliated with the campus are Alpha Delta Pi, Delta Sigma Theta, Delta Zeta and Zeta Tau Alpha.

Service

Circle K is a service club whose membership is open to any interested person. The group stresses people caring about all people, no matter what their backgrounds. It offers an opportunity to help others, have fun, and make friends.

The Nuggets is a newly chartered organization that has as its purpose the promotion of leadership and the involvement of women at UNCC. It is a social as well as a service group, promoting friendship among members. Any student is eligible for membership in The Nuggets.

The *Crescent Club* is a service club whose membership is open to any interested person.

Musical

The University Chorus has added much to the atmosphere of the school. Students enrolled in choral groups meet regularly with the dual purpose of enjoying singing together and improving their own musical abilities. The Chorus furnishes musical programs for special events during the year. All students are eligible to enroll for one semester hour of credit without audition.

The *UNCC Pep Band Club* serves the campus as a musical unit for basketball games, pep rallies, and parades. Post-season travel is also an important element of the Band's agenda. Requirements for prospective members include ability to promote school spirit,

musical dedication with versatile style, and a willingness to strive for improvement.

The *Children of the Sun* (Black Gospel Choir) is an integral part of UNCC. The choir offers an opportunity for interested individuals to exercise and demonstrate their talents in Black Gospel and other Christian-related music. The Children of the Sun welcome you to UNCC and invite your membership in the organization.

Political

The *Young Democrats Club* and the *Young Republicans Club* give the student an opportunity to engage in practical politics as well as to hear speakers from local, state and national levels of our political parties. Membership is open to all interested students.

North Carolina Student Legislature is much more than a class listed under the Political Science Department. It is a growing experience, a political activist group, and a means of promoting public awareness. Patterned after the State Legislature, member delegations draft bills and resolutions in proper form for presentation at the annual session in Raleigh each spring. New members are chosen in the fall through interviews with present members. The members take a course entitled "Practicum and State Politics" and receive three semester hours of credit.

Religious

Student religious groups on campus include the *Baptist Student Union, CHI-RHO Catholic Student Union,* the *Christian Fellowship,* the *Christian Science Organization, Cooperative Christian Ministry in Higher Education, Eckankar, Lutheran Campus Ministry, Student's International Meditation Society,* and *The Way Campus Outreach.*

Special Interests

The *Black Student Union,* an organization of Black students, undertakes projects of awareness and involvement in the Black community in cooperation with the Afro-American/African Studies program at UNCC.

The *Commuter Association* is designed to bring commuting students together, to promote services programs for commuters, and to serve as a voice for the commuter population to the rest of the University community. Its activities center around the Commuter Lounges. Students are involved in many areas, including University governance.

The *International Club* brings together U. S. and foreign students with other members of the University community for a variety of programs. Each month, International Nite features a country in song, dance, food, and discussion. Films, lectures, and social get-togethers are spaced throughout the school year. The Club is open to all.

North Carolina Public Interest Group (NCPIRG-UNCC) articulates and pursues the concerns of students and the community on issues of general public interest, such as environmental protection, consumer protection, race and sex discrimination, and the role of corporations and government agencies in the lives of the average citizen. All students are welcome.

The *Phoenix Society* is an organization for American Indian students and persons interested in Indians and concerned with Indian culture, ethnicity, and pride. Activities include social events, field trips, working with the Charlotte Indian community, and a dance team. The society is concerned with social services as well as recreation. All interested persons are welcome to join.

Soara Aero Club is a non-profit corporation set up for the faculty, staff, and students of UNCC and their immediate families. This club presents the opportunity to obtain a private pilot certificate and/or instrument rating. For more information, contact Bill Smith in the Engineering Analysis & Design Department.

49ers Sports Car Club is an organization that offers fun, competition, and achievement to the sports car enthusiast. It stages at least one event per month and also holds joint events with other motorsport clubs and organizations. Membership is open to all students, faculty, and alumni.

University Forum Council

The University Forum provides a campus platform for outstanding national figures to examine key issues in depth. The University Forum Council, composed of representatives from the student body, the faculty, the administration and the community, sponsors the Forum each year. Usually held during the spring, the Forum was initiated in 1966.

HONORS AND AWARDS

A number of individual student honors and awards for academic achievement, leadership and service are given annually through the various colleges and on a University-wide basis.

HONORARIES

The *Society of 49* is the only campus-wide honorary and was created for the purpose of recognizing outstanding leadership and achievement among students who have made significant contributions to the development of the University community. Twenty-four to 30 students are selected each year by a committee of students, faculty, and staff. Selection is primarily based on a point system which considers academics, leadership, service and activities. The student receiving the highest number of points is given the Cindy Holmes Award in memory of the late Cindy Holmes whose unselfish contributions to the University represent the highest ideals of the Society.

Phi Alpha Theta, which has chapters in the United States, Canada, and the Philippines, has as its purpose to encourage the study of history and to acknowledge academic achievement in history. To be eligible for membership, undergraduates must have completed at least 12 semester hours in history with a grade average in all history courses of 3.1 or better, an overall grade average of 3.0 in other courses, and must rank in the upper 35 per cent of the respective classes. Graduate students who recently received their undergraduate degrees may apply on the basis of their undergraduate records. Graduate students who are not recent graduates must have completed at least one-third of the requirements for the Master's degree (at least 10 credits in history) and have a straight *B* average or better.

The Honor Society of the College of Nursing, *Sigma Theta Tau*, was established for the purpose of recognizing superior knowledge, recognizing the development of leadership qualities, fostering high professional standards, encouraging creative work and strengthening commitment to the ideals and purposes of the nursing profession. Candidates for the honor society are selected from baccalaureate students who have completed at least one-half of the required nursing curriculum with a cumulative grade average of 3.0 or better. Graduate nurses with a baccalaureate or higher degree who have demonstrated marked achievement in the field of nursing are also eligible for membership.

Alpha Kappa Delta is a national sociology honor society established for the purpose of promoting interest in sociology, research on social problems, and enhancement of human welfare. The Eta of North Carolina Chapter was organized at UNCC in 1974. Its members are selected from those students who have demonstrated superior academic achievement both in their sociology major and their total academic program.

Other honoraries on campus:

Criminal Justice—Omega Theta chapter of *Alpha Phi Sigma*
Engineering Technology—Eta Beta chapter of *Tau Alpha Pi*

CHANCELLOR'S LIST

The Chancellor's List is a record of all students whose academic record merits special recognition from the University. In order to qualify for the Chancellor's List, a student must complete 15 semester hours with grades of *A*, *B* or *C* and achieve a quality point average of at least 3.00.

COMMENCEMENT MARSHALS

The juniors who have the highest scholastic averages are honored by being named commencement marshals. The marshal who has the best academic record is designated chief marshal. For the purpose of

this selection, the University considers as juniors those students who will have completed 89 hours of degree work at the end of the spring semester. Juniors who have not completed their last two semesters of work or their last 24 credit hours at the University of North Carolina at Charlotte shall not be considered as eligible as marshals.

GENERAL ALUMNI ASSOCIATION

The General Alumni Association of the University of North Carolina at Charlotte is the recognized official alumni organization. Graduates of the University are encouraged to provide updated address and employment information so that the University may maintain lifelong contacts with each individual. Persons attending the University of North Carolina at Charlotte for one semester are eligible for membership in the General Alumni Association.

Membership can help the student maintain friendships of college days and obtain useful information from the University about programs and social activities. The General Alumni Association executes an annual telefund as part of the annual giving program and contributes to worthy projects for the University. Thus, the alumnus can support Alma Mater in a useful and efficient way.

A magazine is provided to contributing members of the Alumni Association and group tours to vacation spots within the United States and also abroad are organized.

The Alumni Association co-sponsors with the University the Commencement Reception for the new graduates, parents, faculty and friends. Class reunions are held to honor the anniversary of various classes of graduates. The Homecoming activities highlight the events of the fiscal year for our alumni.

The Director of Alumni Affairs acts as the liaison officer between the graduates and the University. The Alumni Office is housed in the Administration Building and encourages alumni to visit the campus and the Alumni Office.

The graduate should notify the Alumni Office of address changes and significant events in his or her life, such as marriage, births, new positions and honors. In this way, adequate records can be maintained, and the Alumni Office can pass good news along to friends of the alumnus.

FACILITIES AND SERVICES

FACILITIES

Department of Public Safety

The Department of Public Safety, located in the basement of the Reese Administration Building, is designed to serve the students,

faculty, and staff of the University and to protect their persons and property. It is divided into three areas—Police, Traffic, and Safety—and also handles the University Lost and Found Department.

Police

Police services to the University community are provided 24 hours a day, seven days a week. Campus police officers are commissioned by the attorney general of North Carolina and have full police powers on campus. Ninety percent of these officers are or have been students, either at UNCC or other institutions, and are sympathetic and understanding of the problems of the students.

The primary responsibility of the Police Department is performing traditional law enforcement roles of prevention of crime, enforcement of laws, protection of life or property, preservation of the peace, and apprehension of criminals.

The department includes an Investigation division to which information regarding criminal activity should be directed. Prompt, confidential attention will be taken. A Crime Prevention and Public Awareness Office has also been established for the University, and is designed to help educate the public in the best ways to protect themselves and their property.

Realizing that people frequently call the police officer when they know of no one else to call, the department takes pride in being available, capable and willing to respond to each situation presented regardless of how small it may seem. It is hopeful that by police displaying a willingness and ability to perform these functions, the University community will become more aware of the presence of the police officer on campus and seek his assistance when crime is observed or suspected. This awareness and quick reaction enhances the crime prevention program by discouraging the commission of crime.

Access to all buildings and all rooms during non-class hours may be gained only with the written permission of a faculty member. University police must be contacted to gain entrance into locked rooms.

Dorm security guards are assigned to the residence halls for the protection and service of the resident students. These guards do not have police authority. Their primary function is to serve as an additional set of eyes for the Police Department. In addition, periodic checks of the dorms are made during evening and night. Duplicate keys are kept to assist students who are locked out of their rooms, and the guard maintains a petty cash box for change purposes.

The University prides itself on its record of safety maintained on campus and this department maintains high standards both in its employees and their functions. However, no program can hope to successfully combat crime without the active assistance and input of the entire college community. When an unusual happening is

observed, it takes only a moment to remember details and report it to the Police Department.

Traffic

The Traffic Division is one of the most visable aspects of the department as all members of the community must make contact during vehicle registration, when obtaining an I.D. card, or when having parking notices processed.

All persons desiring to park motor vehicles on campus are required to purchase and display a University parking permit. Permits designate specific parking area, depending upon the individual's classification as resident, commuter, faculty or staff. None guarantee a space will be available nor do they reserve a specific space, except in the case of handicapped individuals. Parking meters and toll gates are available for visitors on campus. Temporary permits are available from the Traffic Office for new employees, guests, and for vehicles being used while a registered vehicle is being repaired and/or other valid reasons. Abbreviated copies of the *Campus Traffic and Parking Regulations* are available from the Traffic Office for the asking or when purchasing a permit.

The Traffic Office is responsible for providing identification cards for all students, faculty, staff, and all other personnel associated with the University. In order to check out books from the library, cash checks, enter athletic events or to use athletic equipment, one must have a valid I.D. card.

Safety

Another important service offered by the Department of Public Safety is the promotion of safety and accident prevention through the work of a safety coordinator.

It is the responsibility of the coordinator to investigate accidents on campus, conduct safety inspections of all buildings, maintain all reports required by the N.C. Department of Labor and to generally ensure that all persons within the University community are provided with a safe and healthful environment, conducive to the prevention of illness or injury.

Those who have complaints or knowledge of safety hazards are invited to bring them to the attention of the safety coordinator without fear of retaliation. All complaints or notification of hazards will be acted upon and the employee or student notified of the response.

Emergency Numbers

Do not hesitate to contact the Campus Police Office in the event of a problem. In addition, your observations and criticisms of police service are valuable in the continuing process of review, analysis and evaluation. The Director of the Department of Public Safety invites visits and comments.

Emergency numbers are:

CAMPUS POLICE—EMERGENCY	597-2200
DIRECTOR of PUBLIC SAFETY & NON-EMERGENCY CALLS	597-2282
SAFETY	597-2449
HEALTH SERVICE (radio contact with police)	597-2265
CAMPUS OPERATOR	597-2000
MECKLENBURG COUNTY POLICE—EMERGENCY	9-374-3333

University Residence Halls

UNCC on-campus housing offers students an experience filled with opportunities. Four high-rise residence halls, housing approximately 500 students each, are designed to provide each student with both a degree of privacy and the opportunity to enjoy the close relationship of small group living. In addition, the University's new low-rise apartments offer a different life-style option for upperclass, continuing students. Professional staff members, as well as student floor advisers, are committed to working with students in the development of a sense of community conducive to academic and personal growth through programming, advising and acquainting students with the many resources of the University. Program offerings in leadership training, career and life planning, academic enrichment, and many areas of personal awareness are all designed to further the total development of each student.

In the high-rise halls, each room includes study and sleeping areas for two students and is equipped with built-in dressers, study desks, chairs and closets. In addition, each floor is equipped with a central lounge, study, typing and seminar rooms. Two high-speed elevators service each air-conditioned residence hall.

The main floor contains the office of the residence coordinator, student mail boxes, a concessions area, library, lounge and student government offices. The lower floor contains a recreation room and laundry room.

Normally, all rooms are assigned as double occupancy due to space limitations. If space permits, a student may occupy a room without having a roommate, the rate being one and one-half the charge for a double room. Single occupancy rates always apply when the room is occupied by only one student.

The apartments are furnished, four bedroom units for four students. In addition to the bedrooms, each unit consists of an equipped kitchen, living/dining area, and bathroom.

The University has no requirement regarding on-campus residence. However, space is limited and is filled early. If a student plans to live in the residence halls, he or she should apply as soon as possible. An application form will be sent to the entering student at the time of his or her final admission to the University. A $50 prepayment must accompany each application.

Library

The J. Murrey Atkins Library is at the center of the development of the University of North Carolina at Charlotte. Housed in a two-story services building and the 11-story Dalton Tower, the Library is attractive and inviting and offers students a variety of learning materials and services.

There is a collection of approximately 235,000 volumes and some 300,000 units of microfilm.

More than 4,000 current periodicals and serials are received through subscriptions. Back files of certain periodicals and newspapers—such as *The New York Times*, *The Charlotte Observer*, *The Charlotte News* and *The Wall Street Journal*—are available on microfilm.

The Library of Congress classification system is used for the arrangement of books and periodicals.

Also available to the University Community are a number of special collections.

A depository since 1964, the library now has 70,000 U.S. government documents and a number of U.N. publications. Hundreds of new documents arrive each month.

An archives collection includes manuscripts, photographs and other materials relating to the history of the University. Also found is the Rare Book Collection, which contains literary first editions, early printed works, fine press books and a large number of seventeenth and eighteenth century English plays.

A Caroliniana collection of reference materials relating to North and South Carolina is located in the lobby.

A staff of some 60 people, including 16 librarians, acquires, organizes and services the collections. Reference personnel are available to assist students in finding information, researching class projects and obtaining materials for course papers. They regularly conduct classes in library use.

The library also administers the University's Oral History Program. Tape-recorded interviews with a number of distinguished citizens of the Piedmont have been conducted, and these are available for use by the Library's clientele.

Library materials assigned for class reading are housed on the tenth floor of the Dalton Tower. Sound recordings, audio-visual media, college catalogs, and education curriculum materials are also located there.

In addition to materials directly related to classroom work, the library provides students with general and recreational reading.

Comfortable reading areas are spaced throughout the building. Student carrels and tables are available for concentrated study. Persons doing special research may apply for private study rooms located in the tower.

Exhibits on topics of special interest to the campus and the community are featured in display cases on the main and second floors. There is also an excellent art collection dispersed throughout the Library including sculpture, oils, lithographs, watercolors and etchings.

The Friends of UNCC have played a significant role in developing the library collection. Individual donors have also contributed greatly to the growth of the J. Murrey Atkins Library.

Bonnie E. Cone University Center

The Cone University Center is a place where you can meet informally with members of the faculty and staff, with friends, make new acquaintances, lounge between classes, participate in student activities, eat, and, in general, it's a very comfortable place to spend your free time.

Within the University Center are located the offices of the Student Body Government, *Carolina Journal*, WVFN, *Sanskrit*, *Rogues and Raseals*, Black Student Union, University Program Board, Student Financial Services, CAUCUS (Clubs and Organizations) Lounge, Venture Program, dean of students and the administrative offices for the University Center.

Some of the services and facilities that you will be using include the Craft Arts Center, Gamesroom, Information Desk, Travel Center, the Little Gallery, INFO Line, meeting rooms with facilities for dances, lectures, concerts, films and banquets.

Rathskeller

The Rathskeller is located beneath the Residence Hall Cafeteria. Within it is a snack bar which serves pizza, sandwiches made to order, hot dogs, hamburgers and ice cream. The Rathskeller Program Committee offers a wide variety of entertainment for your enjoyment including name coffeehouse entertainment, movies, foosball and TV viewing. It is the perfect place for your evening entertainment and social enjoyment.

UNCC Experimental Ecological Reserve

In July, 1975, the UNCC Board of Trustees set aside a 63-acre tract of land on campus as a permanent ecological reserve for use as an outdoor classroom and laboratory. The reserve includes an eight-acre old field, pine stands, mixed pine-hardwood forest, and a relatively undisturbed 10-acre watershed of oak-hickory forest.

SERVICES

Transportation

The Charlotte City Transit System provides bus transportation from the Square and from Southpark Shopping Center on a regular schedule connecting with established routes. Detailed information regarding routes, schedules and fares may be obtained at the UNCC Information Desk or by calling 374-3366.

Low cost passes may be obtained with a UNCC I.D. card at the Business Office.

University Counseling Center

The University Counseling Center offers the services of professionally trained counselors and psychologists to the University community without charge. Initial counseling appointments may be arranged in Room 06 of the Atkins Building or by calling 597-2104. All counseling interviews are treated in a confidential manner.

The aim of the Counseling Center is to help individuals to gain greater self-understanding, to deal effectively with important decisions and to resolve current problems. The counseling process is individualized for each person to meet his particular needs. It may include individual sessions with a professional counselor, group meetings, use of standardized tests of interests, aptitudes and personality characteristics, or utilization of an extensive occupational-educational library. The staff is also available for consultation to University faculty, groups and agencies.

In addition, the Counseling Center offers special services in reading and study skills. The contents of the programs are offered to both group and individual bases to meet the specific needs of individual students. Group programs concentrate on short sessions in speed reading, study skills, note taking, brief writing and effective listening. Students are offered the opportunity to continue the group programs on an individualized basis in an open atmosphere. Individualized studies can be broadened to include vocabulary development, spelling, reading and listening improvement, mathematics and English.

Placement

The Placement Office (located in Room 01, Atkins Library) functions as the central placement agency for the campus and serves undergraduates, graduate students and alumni by assisting them in developing their career objectives (preferably beginning with their admission to the University) and in obtaining employment. Services include career planning and guidance; advising on the techniques of employment prospecting, on job selection and analysis, on interviewing, on the preparation of resumes and writing business letters; maintaining, for student browsing, files of information on prospective employers (business firms, governmental agencies, school

systems) and on graduate school fellowships and assistantships; providing liaison between employers or graduate schools and graduates through on-campus recruiting by employers and graduate school representatives and by individual referral for current employment openings.

Students who wish to earn part of their educational expenses or to gain work experience may register for part-time, full-time or summer employment off campus. Every effort is made to assist the student who expresses a need for employment and, where possible, to place the student in a position relating to his/her vocational goal.

Degree candidates register with the Placement Office on a voluntary basis early in their graduating year by completing a resume and requesting three professors and/or employers to complete evaluations on forms provided by the Placement Office. At the present time, these credentials are retained on a permanent basis.

The Family Educational Rights and Privacy Act of 1974 provides that the release of these credentials or information in the file must be authorized in writing by the registrant unless the information is a matter of public record, and that under certain conditions each student may have the right to review his/her placement file (resume and evaluations) and to obtain a copy of it for a fee.

All employers and schools interviewing on campus or listing openings with the Placement Office must indicate that they are equal opportunity employers, that is, that in hiring, compensation, promotion, training or admission they do not discriminate on the basis of race, color, religion, sex, national origin or handicap.

International Student Services

Director: Earl L. Backman
International Student Adviser: Marian Beane

The University of North Carolina at Charlotte believes in the concept of international exchange. It welcomes students from other countries to its campus, where cultural exchanges with Americans can take place.

The international student adviser assists foreign students with personal problems and with adjustment to the customs and procedures of American higher education. The adviser can give assistance with visas, government regulations, employment, housing and general orientation to American life. The office is located in 205 Cone University Center.

Study Abroad

The Program for International Studies provides information and advice to American students planning to study abroad. This includes programs coordinated by UNCC as well as cooperative programs with other institutions. The office is located in 113 Denny Building.

Computer Center

The Computer Center provides digital computer support to the academic and administrative programs at the University. Less than 20 years ago the use of computers was at its infancy, and now it has been said that this is the "Computer Decade." In fact, the computer revolution has been compared in its impact on society to the industrial revolution. Students are encouraged to learn about computer utility through use of the resources in the Computer Center. These resources include a Burroughs B6700 Computer System, a terminal connection to the Triangle Universities Computation Center and a variety of software.

Use of the computer is widespread at UNCC. Examples of its use in academic areas are the study of programming languages in computer science, statistical analysis of data files for sociology, history, political science and psychology, transportation problem solving in geography, and molecular analysis in chemistry. Examples of its use in administrative areas are maintenance of vendor and budget files for the business office and the processing of student information for the Records and Admissions Office.

Health Service

The University Health Service, housed in a building completed in 1971, is operated 24 hours a day, seven days a week during regular school terms. The building has a capacity for 22 patients, with eight semi-private rooms and six private rooms. Physician care is provided on a full-time basis. The physician has regular hours daily and is on call for emergencies. Registered nurses are on duty at all times.

The Health Service offers comprehensive and confidential care to all students with referral available when the services of a specialist are required.

Food Service

Resident students contract for room and board which provides three meals each day on either a five-day or a seven-day plan, as they choose. These students are permitted to take meals at any one of the three food service locations on campus: the Residence Halls Cafeteria, the University Center Cafeteria, or the Rathskeller. A dollar allowance is given for meals taken in other than the Residence Halls Cafeteria and resident students pay cash for anything over the established amount.

Commuter students have several options for eating on campus. They may purchase a meal ticket and be on the same basis as the resident student with the transferability privilege. This is accomplished by going to the Office of Auxiliary and Business Services in Atkins Library and making the necessary arrangements. In addition, the commuter student may purchase all his meals for cash at the University Center Cafeteria, the Denny Snack Bar, the Rathskeller, or the Residence Halls Cafeteria.

Vending machines are located throughout the campus, and the vending area in the University Center has a micro-wave oven for heating items available in the machines.

Hours of operation of all food service units are posted in each unit. Generally speaking, food service of one kind or another is available on campus from 7:00 a.m. to 11:00 p.m.; vending is, of course, available whenever buildings are open.

Office of Continuing Education and Summer Programs

Director: Seth H. Ellis
Coordinators: Dorothea G. Lakin
John D. Moore

The Office of Continuing Education and Summer Programs is responsible for three separate areas of University programming: Continuing Education, Extension, and Summer Sessions.

(a) Continuing Education or Adult Education is a series of programs tailored to the needs of the Charlotte area, taught either on or off the UNCC campus. Such programs may be designed for the general public or for special interest groups, but are usually of short duration and limited scope. They, therefore, do not award academic credit but may award continuing education units (CEU's). The CEU is rapidly becoming a universal unit of measure for non-academic involvement in educational programs, and records of CEU's are kept permanently. One CEU is awarded for every 10 hours of structured educational activity. Teachers of continuing education programs are contracted from the UNCC faculty and the community at large. Requests for programs or application to conduct a continuing education project should be submitted to the Office of Continuing Education and Summer Programs.

(b) Extension is defined as programs developed and offered to client groups other than the residential daytime student. Extension work is limited to the academic areas approved for credit by The University of North Carolina Board of Governors and to courses approved by the UNCC faculty. Faculty teaching in extension must be approved by the academic department which awards the credit. Extension credit may be applied toward a degree at UNCC, but is limited by the residency required in each degree program.

(c) Summer Sessions are held each summer, beginning in May and running until mid-August. Two terms of six weeks each are supplemented by short-term courses, institutes, and workshops. Several longer-termed courses are also offered. Continuing students, visitors, or students from the community should find their needs answered by offerings from many disciplines and for many time-frames. Summer Session schedules are usually available during the first week in February from the Office of Continuing Education and Summer Programs.

Institute for Urban Studies and Community Service

Director: James L. Cox
Research Director: W. Patrick Beaton
Community Service Director: N. David Milder
Institute Associate: Mary Dawn Liston
Project Coordinator: Cheryl E. Furr
Administrative Assistant: Jane A. Begole

The Institute for Urban Studies and Community Service conducts a variety of programs which provide faculty and students with opportunities to become involved in urban research, community service, and continuing education programs. College and departmental faculty participate along with Institute staff on numerous projects funded by contracts and grants. Students can become involved in these projects as part-time research assistants. Student participation in Institute projects can also provide the basis for term papers, graduate theses, and internships.

The Institute formulates its long-term efforts with the advice of an advisory committee composed of prominent persons from the public and private sectors from the Metrolina region which meets several times each year. It also cooperates with urban centers at the University of North Carolina at Chapel Hill and North Carolina State University at Raleigh in an effort to develop jointly planned programs. In 1977, this cooperation led to the Governor's Conference on Economic Development and Balanced Growth held in Charlotte.

The research component of the Institute develops and implements applied research projects relating to problems of urbanization. Current research projects sponsored by the Institute include the development and application of a data system based upon computerized real property appraisal information, an analysis of Section 8 housing programs in North Carolina, and a study of potential damage to flood prone structures in Charlotte.

The community service role of the Institute focuses on community education and training programs for public administrators and local businessmen and technical assistance to city and county governments. These activities recently included a series of seminars for local business, government and civic leaders concerning land use and urbanization in Charlotte/Mecklenburg; the development of policies and procedures manuals for three North Carolina counties; and workshops for local business groups and organizations concerning redevelopment techniques.

Learning Resources Center

The Learning Resources Center offers a wide range of audio and visual communication services to both students and faculty engaged in University-sponsored functions. The Center is located in Atkins 200 and is open from 7:30 a.m. to 10 p.m. Monday through Thursday and until 5 p.m. on Friday.

A versatile and creative media production staff will aid you in producing high quality color slides, overhead transparencies, black and white photographs, video tapes, multi-media programs, as well as high impact multi-image presentations. These media productions are effective for improving classroom instruction, professional presentations, student projects and public relations.

The Learning Resources Center loans communications equipment for short-term use to students and faculty. Among the devices available are motion picture projectors, slide and filmstrip projectors, overhead and opaque projectors, photographic cameras, audio and video tape recorders, public address systems, record players and projector screens. The staff offers advice on the selection of appropriate equipment as well as operating instructions.

A small television studio is available for students and faculty to produce black and white video tapes. The studio is used for recording interviews with campus guests, presentation of student projects, producing auto-tutorial laboratory tapes, and providing immediate feedback of performance for individual or group analysis. Equipment is available for playback of video tapes in University classrooms.

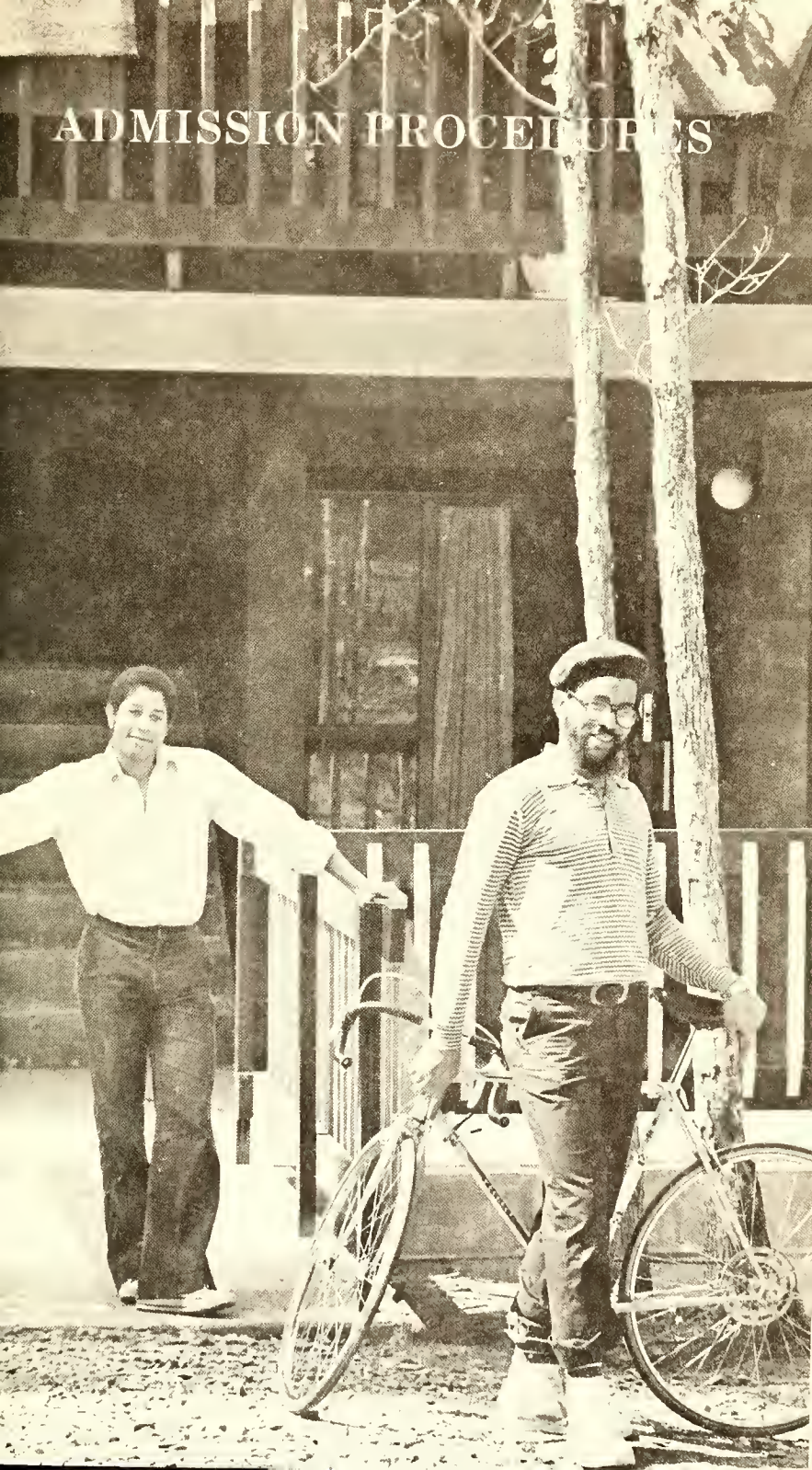
Approximately 400 University owned 16mm motion pictures are distributed through the Learning Resources Center. Students and faculty may borrow these films without charge. Through an on-going film preview program, new films are constantly being evaluated and purchased. Your assistance is requested in identifying and evaluating new films. Films are purchased with funds from each departmental library materials allocation. If appropriate films are not available on campus, our staff will coordinate your film rental orders from outside film distributors. Rental fees are charged to each department or individual.

Recognizing that audio and visual communications are a vital and integral part of every person's professional development, the Learning Resources staff offers a variety of communications workshops on such topics as television production, color slide production, slide duplication, dry mounting, laminating, thermal and diazo transparency production, projector operation, audio and video tape recording, and instructional development. Workshops can be requested and planned by student and faculty groups interested in expanding communications skills.

Bookstore

In addition to required textbooks, the campus bookstore makes available paperback books for leisure reading, records, sweatshirts, jackets and special order shirts, campus emblems, personal grooming items, routine school supplies, greeting cards, sundries, fraternity/sorority items, household and novelty items. The bookstore also offers film developing and printing service and service for special order books.

ADMISSION PROCEDURES



ADMISSION TO THE UNIVERSITY

The University considers all applications without regard to race, color or sex. It reserves the right to withhold the admission of any applicant who fails to meet any of the requirements for admission. In addition, it reserves the right to restrict enrollments when necessary because of budgetary or other constraints. Applications for either regular semester or the summer terms should be submitted and completed no later than the dates published on page 7. In some programs, the vacancies will be filled several weeks prior to those deadlines.

Evidence of good physical and mental health is required prior to registration. A medical report form is sent to successful applicants along with the notice of admission.

The Admissions Decision

All applications for admission are reviewed as soon as the required credentials are received. All relevant factors are considered, with major emphasis being placed on the academic history of the applicant. The intent of the University is to offer admission to those applicants whose credentials indicate a strong likelihood for success in their selected curricula.

Offers of admission are *conditional* until all required credentials such as final transcripts and the medical report form have been received. The failure of an applicant to supply such evidence may result in the revocation of the offer of admission.

Undergraduate students should address their requests for applications and information to the Director of Undergraduate Admissions, UNCC, Charlotte, North Carolina 28223. Inquiries concerning post-baccalaureate or graduate study should be made to the Director of Graduate Studies, UNCC, Charlotte, North Carolina 28223.

REQUIREMENTS FOR UNDERGRADUATE ADMISSION

General Requirements

1. Satisfactory evidence of good character.

2. Satisfactory record of scholastic achievement.

3. Application fee of $10, which is neither deductible nor refundable.

4. The applicant bears the responsibility for supplying the University with all required credentials.

Requirements for consideration for admission to Freshman Standing:

1. Transcript of Secondary School study which identifies the applicant as a graduate of an accredited secondary school and

bears a recommendation by a school official. Lack of any recommendation will make it necessary to return the record to the school for completion. The record should show the grades through the eleventh year, senior year courses in progress, rank in class and pertinent test data. A high school equivalency certificate may be submitted in lieu of a secondary school diploma.

2. Sixteen acceptable units, 13 of which must represent basic academic courses. The suggested distribution is: English (4); algebra and geometry (3); one foreign language (2); social sciences (2); natural science (1); and electives (4). Emphasis will vary according to the college or program into which admission is sought. Engineering and Architecture applicants must present algebra, trigonometry, plane and solid geometry, or the equivalent in integrated courses. Nursing applicants must present biology and chemistry.

3. An *official* score report from the American College Testing Program (ACT) or the Scholastic Aptitude Test of the College Entrance Examination Board (SAT).

4. Transfer applicants who present fewer than 24 hours of transferable work are considered *applicants for freshman standing* and, in addition to the requirements listed above, they must have attained at least a *C* average in their post-secondary study, as evidenced by official transcripts mailed directly to the Office of Undergraduate Admissions by each institution attended. A Confidential Statement is required from the last institution regularly attended.

Early Admission

The University will admit specially talented high school students after they have completed the eleventh grade (achieved bona fide senior status as defined by their respective school systems) providing they meet other standards required for freshman admission.

A letter of recommendation from the student's secondary school principal is required for consideration for early admission.

Scholastic Aptitude Tests

While the University recognizes that test scores are less important than academic history in predicting the chances for collegiate success, applicants are expected to meet minimum score requirements, as follow:

SAT—A total score of 800, with neither the Verbal nor the Math scores below 350. A Math score of 450 or higher is expected of applicants for the programs in Architecture and Engineering.

ACT—A composite score of 18 except that applicants for programs in Architecture and Engineering are expected to present a Math score of 20 or higher.

Students may obtain test information and application forms from their school counselors or by writing to:

American College Testing Program
P.O. Box 168
Iowa City, Iowa 52240

Educational Testing Service
P.O. Box 592
Princeton, New Jersey 08540

Educational Testing Service
P.O. Box 1025
Berkeley, California 94701

Admission of Transfer Students

Applicants who have attended other post-secondary institutions *without earning at least 24 semester hours in transferable courses* are considered to be applicants for freshman standing. *(See preceding section.)*

Requirements for consideration for admission of Transfer Students:

1. Official transcripts must be mailed directly to the Office of Undergraduate Admissions by each post-secondary institution an applicant has attended.

2. An official secondary school transcript.

3. A Confidential Statement from the last institution regularly attended.

Applicants for transfer admission must present a minimum academic average of *C*, based on *all* post-secondary courses attempted. Applicants for the programs in Engineering Technology, Nursing and the General Criminal Justice concentration within the Criminal Justice Program will find other conditions for admission and/or advanced standing in those programs described in the following paragraphs.

Engineering Technology

Technical institute graduates who wish to enter the engineering technology program at the University of North Carolina at Charlotte must meet the following requirements:

(1) Earn an Associate in Applied Science degree,or its equivalent, in a field appropriate to the option which the student plans to enter.

(2) Achieve an overall quality-point average of at least 2.2 (based on the 4.0 scale) on all courses taken at the technical institute. Exceptions to this requirement will be considered on the basis of individual merit.

(3) Complete satisfactorily the prerequisite background courses for the option which the student plans to enter.

Acceptance of the A.A.S. degree indicates the acceptance of 64 semester hours toward the Bachelor of Engineering Technology degree only. These hours become invalid when a student transfers to any other degree program.

Nursing

Registered nurses who are currently licensed to practice nursing and who meet University requirements for admission as freshmen or transfer students are considered for admission to the College of Nursing. Advanced standing in nursing will be awarded on the basis of achievement demonstrated by qualifying examinations administered after admission to the College of Nursing.

Criminal Justice

Graduates of two-year institutions who wish to enter the General concentration, which is one of the four concentrations offered in the Criminal Justice Program, must have earned an A.A.S. degree with a major in a criminal justice area.

Upon acceptance of the A.A.S. degree, the successful applicant may be granted up to 64 semester hours which are valid only toward the General concentration.

Entrance Deficiencies

Applicants who are otherwise well-qualified may be offered admission even though they are lacking the prescribed entrance units in foreign languages or mathematics.

Since the University offers no remedial courses in mathematics, that type of deficiency should be removed during the summer prior to the student's freshman year. The necessary courses are frequently offered in the summer programs of secondary schools, community colleges and technical institutes.

Students lacking units in a foreign language are expected to remove that deficiency during the freshman year at the University.

All entrance deficiencies must be removed before registration for the third semester.

Admission to other than Freshman or Transfer status:

Auditors

Any student eligible for admission to the University may register as an *auditor* for any class in which space is available. The fees and procedures are the same as those for a credit enrollment.

The participation of auditors in class discussion and in tests or examinations is optional with the instructor. Auditors receive no University credit but they are expected to attend class regularly.

Notation of an audited course on the student's permanent record is made, but no grade will be given.

The procedure for adding or dropping an audit course is the same as for credit enrollments.

Special Students

Special students are those who are not candidates for degrees and who do not file complete academic credentials. They may enroll in undergraduate courses at UNCC until they have attempted a total of 18 semester hours with grade evaluation, but regular degree students will have preference for a place in classes. They are expected to conform to the standards required of all students. After reaching the 18 hour limitation, special students must be reviewed and be acceptable for regular degree status before enrolling again at UNCC.

Special students who have done previous college work (including UNCC) must be eligible to return to the institution last attended.

The student must be 18 years of age or over and must understand at the time of his registration that the work completed in special student status will be evaluated in terms of major department and degree requirements only after the student's formal admission to a degree program.

Enrollment of Senior Citizens

Residents of North Carolina who have attained the age of 65 and who meet applicable admission standards may enroll tuition-free on a space-available basis. Senior citizens who enroll in the Creative Arts Department's offerings will be obligated to pay the special fees which are assessed all students who enroll in the department. Interested persons should contact the Office of Undergraduate Admissions.

Former Students

A student must make application for readmission to the University if he did not complete the last *regular* semester, fall or spring, prior to the semester or summer term for which he wishes to register. Applications should be filed at the Undergraduate Admissions Office in accordance with the published application dates.

Readmissions decisions are based on a review of the student's complete University record, with major emphasis given to the academic history and the probability for success in the major department and in terms of the general degree requirements.

Admission of Transient Students (Visitors)

Students enrolled at other colleges and universities who have the written permission from their institution to take specified courses at the University in a given semester term may be enrolled as transient students.

College Credit in Escrow Program

The Escrow Program provides an opportunity for highly qualified students to take college credit courses while enrolled in secondary school. Records of credit earned will be maintained for use at the University or at another institution of higher learning.

Applicants recommended for participation in the program usually have shown great ability in particular academic areas. The recommendations are normally made through the office of the superintendent of the school district.

Requests for additional information and application blanks should be directed to the Office of Undergraduate Admissions at UNCC.

Second Baccalaureate Degree

Students who have earned bachelor's degrees from UNCC or other accredited institutions may enroll in a program leading to a second degree of the same level if the following requirements are met:

Admission Requirements

1. Application must be made to the Undergraduate Admissions Office by the date published in the University calendar.

2. The major field selected must be different from that of the first degree.

3. The degree sought must be different from the first when that degree was granted by UNCC.

4. Admission to a second degree program requires the approval of the appropriate academic chairperson and college dean.

Degree Requirements

1. Successful students will fulfill all general degree requirements and achieve a minimum Grade Point Average of 2.00 on all work attempted toward the second degree.

2. All department and college requirements, both qualitative and quantitative, must be satisfied.

3. A minimum of 24 semester hours beyond those applied to the first degree must be completed and students whose first degrees were not from UNCC also must meet the UNCC residency requirements.

ADVANCED STANDING

A. *Advanced Placement Course Credit (APP)*

The departments of Biology, Chemistry, Foreign Languages, History and Mathematics have authorized University credit for students who present scores of 3, 4 or 5 on Advanced Placement Tests of the College Entrance Examination Board.

Students who present scores in other subject areas will be granted credit for test scores of 4 or 5.

B. *College Level Examination Program (CLEP)*

The General Examinations
A student may receive up to 32 semester hours of credit equivalent to the UNCC general degree requirements, with credit being awarded only for scores at the 50th percentile, or higher.

The Subject Matter Examinations
Credit may be awarded for subject matter examinations, except Medical Technology and Nursing, at the levels recommended in the current edition of *CLEP SCORES: Interpretation and Use.*

The amount of CLEP credit which is applicable to a specific degree program is determined by the respective departments.

C. *Transfer Credit from Other Institutions*

Transcripts are evaluated by examiners in the Office of Undergraduate Admissions and the results are provided to each applicant and to his major department. Determining the applicability of any transferred credits to major or program requirements is the responsibility of the department chairperson or program director. General rules governing transfer credit are:

1) No credit below *C* level will be accepted; quality points and averages do *not* transfer.

2) Courses in which credit is accepted must be appropriate for approved University programs and curricula.

3) A limited number of correspondence and/or extension courses may be transferred.

4) The University accepts a maximum of 64 semester hours from two-year institutions.

APPLICATION DATES

Due to the large number of applications the University is receiving and due to the rapid growth of this campus, the University may be

required to announce an earlier cutoff date for application. Unless such an announcement is made, applications may be submitted and completed according to the following schedule:

Term of Entry	*Application Must Be Filed By*	*Application Must Be Completed By*
First Summer Term	May 1	May 15
Second Summer Term	June 15	July 1
Fall Semester	July 1	July 15
Spring Semester	December 1	December 15
First Summer Term	May 1	May 15
Second Summer Term	June 15	July 1

The University may alter these application dates in accordance with available resources and the enrollment limitation established by the North Carolina General Assembly.

DEGREES OFFERED

DEGREES OFFERED

The following degrees are offered at the University of North Carolina at Charlotte:

Bachelor of Arts (B.A.)

With Majors in:

Afro-American and African Studies
Anthropology
Architecture
Biology
Business Administration
Chemistry
Earth Science
Economics
English
French
Geography
German
History
Human Development and Learning
Mathematics
Philosophy
Physics
Political Science
Psychology
Religious Studies
Sociology
Spanish

Bachelor of Architecture (B.Arch.) (5-year program)

Bachelor of Science (B.S.)

With Majors in:

Accounting
Biology
Chemistry
Criminal Justice
Mathematics
Nursing
Physics

Bachelor of Creative Arts (B.C.A.)

Art Dance Music Theater

Bachelor of Science in Engineering (B.S.E.)

With Options in:

Engineering Analysis and Design
Engineering Science, Mechanics, and Materials
Urban and Environmental Engineering

Bachelor of Engineering Technology (B.E.T.)

With Options in:

Civil Electrical Mechanical

Master of Arts
English
History
Geography
Mathematics
Master of Arts in Education
Mathematics
Master of Education
Master of Business Administration
Master of Science
Biology
Chemistry
Master of Urban Administration

GRADUATION WITH HONORS

Each of the undergraduate degrees except the B.C.A. (no grade point average computed) is awarded with high honor, when the graduate's quality point ratio is 3.80 or more, or with honor, when his quality point average is 3.40 or more but less than 3.80.

To be eligible for degree honors, a student must attempt in residency at UNCC 48 hours used in computing the quality point average.

DEGREE REQUIREMENTS FOR BACHELOR OF ARTS AND BACHELOR OF SCIENCE

Course Requirements

The University of North Carolina at Charlotte has a minimum number of required courses to give the student maximum freedom in selection.

Following are the required courses:

Subject	*Semester Hours Required*
English	6
Option of Mathematics or Foreign Language***	6-8
Natural Science (One year of a laboratory science—biology, chemistry, Earth Science 101, 102, physics, or Psychology 101-101L. Psychology 101 may be offered as a natural science or as a social science but not as both.)	8
Social Science (to be selected from Anthropology, Criminal Justice, Economics, Geography, Political Science, Psychology or Sociology)	6
Humanities (to be selected from any courses offered by the College of Humanities that are not used to satisfy any other requirement for a degree. A foreign language may be offered as a foreign language or as a humanities, but not both.)	6
Total Number of Semester Hours Required for Graduation	120***

Note: For the number of hours in the major department, see the requirements of that department in the section entitled *Courses of study.*

*A course in logic may be substituted for one course in mathematics. The rest of a student's course work is under the advisement of his department.

**Or proficiency in language equivalent to completion of the fourth semester.

***The Bachelor of Arts in Architecture requires 132 hours. The Bachelor of Architecture requires 164 hours.

Quality Point Requirements

In all courses attempted at the University, a minimum overall quality point average of 2.00 is required. In all courses in the major, a minimum quality point average of 2.00 is required.

Course Level Requirement

Junior and senior students are required to have the consent of their major department to enroll in any course below the 300 level not required in their degree program.

Residence Requirements

The minimum residence requirement for a Bachelor's Degree at the University of North Carolina at Charlotte is that a student must earn the last 30 semester hours of credit at the University. The last 12 semester hours of the work in his major field must be earned at the University. Exception to either of these hour provisions may be made upon the approval of the student's major department in consultation with the department offering the course or courses in question and with the approval of the dean of the college of the student's major.

Course work taken in residence shall be construed to mean work offered by the University of North Carolina at Charlotte and taken in course on the Charlotte campus.

REQUIREMENTS FOR THE BACHELOR OF CREATIVE ARTS DEGREE

To receive the Bachelor of Creative Arts degree, a student must have completed a minimum of eight semesters of work (or its equivalent) and meet the following stipulations:

1. The last two semesters must be completed in residence in the BCA program.

2. Under consultation with his major adviser, a student forms a graduation review committee, consisting of: his major professor, one other professor in his field, two professors outside his field, and two students from his advisee group.

3. The candidate's portfolio, manuscript or performance must be appraised by his major professor and two other professors from outside the candidate's field.

4. The student must have a recommendation by a review board of three students from his field.

FOREIGN LANGUAGE REQUIREMENTS

If a student elects the foreign language option, he is expected to achieve and demonstrate proficiency in a language other than

English. Proficiency must at least equal that obtained by successful completion of 202-level language courses.

A student who presents four high school units in the same foreign language will be presumed to have satisfied the foreign language option of the general degree requirements even though he receives no University credit in that language.

The student who presents two units in a given language for entrance and who, by placement test, is found capable of enrolling in the 201 course in the same language, can satisfy the general degree requirement by successfully completing the 201 and 202 courses in that language.

The student who, on the basis of placement results, is advised to repeat the elementary course will receive credit for doing so. He may also choose to take an elementary course in another foreign language for elective credit.

A student provisionally admitted without foreign language units must take two elementary language courses for which he receives elective credit.

A student transferring to the University of North Carolina at Charlotte with two or more years of college work in an ancient or modern language not taught at the University, with a grade of at least *C* in each course, will be deemed to have fulfilled his foreign language requirement, provided he has completed satisfactorily two years of high school foreign language.

Students transferring from other colleges will take language placement tests in the language they intend to continue at the University, and they will be advised to register for the course for which they are best fitted, according to their placement test scores, for best results in their language sequence. They may not, however, receive credit again for courses the equivalent of which have already been accepted for transfer credit.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE IN ENGINEERING

The minimum residence requirement for a Bachelor of Science in Engineering Degree at the University of North Carolina at Charlotte specifies that a student must earn the last 30 semester hours of credit at the University. The last 12 semester hours of the work in his major field must be earned at the University. Exception to either of these hour provisions may be made upon approval of the student's major department in consultation with the department offering the course or courses in question and with the approval of the dean of the College of Engineering.

Course work taken in residence shall be construed to mean course work offered by the University of North Carolina at Charlotte and taken on the Charlotte campus.

Course Requirements

English	3
Humanities and Social Studies Elective	15
Economics 201 or 202	3
Mathematics 105, 141, 142, 241, 271	15
Physics 101, 102, 222	11
Chemistry 101, 105	4
Science Elective	3
EGR 101A, B, C, 102A, B, C	6
ESM 241, 242, 311	9
Departmental Requirements*	42
Minor Option	15
Total Number of Semester Hours Required for Graduation	126

Quality Point Requirements

In all courses attempted at the University, a minimum overall quality point average of 2.00 is required.

In all courses attempted in the College of Engineering, a minimum quality point average of 2.00 is required.

Course Level Requirements

Junior and senior students must have the consent of the College of Engineering to enroll in any 100 or 200 courses not required in their degree program. The engineering electives, the humanities and social science electives, and the technical or humanities electives will ordinarily consist of sequences of related courses and are subject to the prior approval of the College.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ENGINEERING TECHNOLOGY

The residence requirement for the Bachelor of Engineering Technology degree at the University of North Carolina at Charlotte specifies that the last 30 semester hours of credit must be earned at UNCC and that the last 12 semester hours of work in the major field must be earned at this University.

Course Requirements

Prerequisite courses for entering the Engineering Technology program, normally taken at a technical institute or junior college, are listed on page 151.

In addition, the following UNCC courses are required for the B.E.T. degree:

*See the departmental section of the catalog for three specific requirements.

Title	*Sem. Hours*
Chemistry 101 (or other Natural Science)	3*
Computer Science (CSC) 100	3
Economics 201 or 202	3
Humanities or Social Science electives	12*
Free electives	3
Major electives	6*
Engineering Analysis	6*
Specified courses in major area of study (see p. 000)	28*
Total	64
Transfer credit for A.A.S. degree	64
Total number of semester hours required for B.E.T. degree	128

Quality Point Requirements

In all courses attempted at the University, a minimum overall quality point average of 2.00 is required.

In all courses attempted in the College of Engineering, a minimum quality point average of 2.00 is required.

SECOND BACCALAUREATE DEGREE (See page 000.)

HONORS PROGRAM

The purpose of honors programs at the University of North Carolina at Charlotte shall be to identify the creative, imaginative, and/or exceptional student, and to encourage and recognize the development of this student's potential.

Honors work will emphasize independent study. Honors work may be undertaken as early as the first semester of the freshman year. To qualify for graduation with honors recognition, the student must be admitted formally to honors candidacy by the University Honors Council at least two semesters before graduation.

To qualify for graduation with honors recognition, the student must present a total of at least six hours of upper division honors work, undertaken during no fewer than two semesters, with grades of *Pass Honors (HH).* Three of these hours must be devoted to research leading to the production of an acceptable honors thesis or its equivalent. The student may withdraw from honors courses without penalty and may withdraw at any time from the honors program without penalty. Credit shall be given towards graduation for any completed honors courses.

Non-candidates for honors recognition shall be permitted to enroll in and receive credit for honors courses.

*Differences exist for CET curriculum.

The grading system for honors courses shall be as follows:

Pass Honors (HH). The student shall receive the quality points equivalent to the letter grade *A* and hours so passed shall be averaged into the student's overall grade point average.

Pass (HP). No honors credit or quality points shall be given, but the student shall receive course credits.

No Credit (NC). No course or grade credit or penalty shall be given.

The credit system for honors courses shall be identical to that used for all other undergraduate courses.

AFRO-AMERICAN AND AFRICAN STUDIES

Acting Director: Assistant Professor Norman

The director facilitates the implementation of the program which will enable the University's Black students to come to an awareness of who they are, where they come from, where they are going and why.

PROGRAM FOR INTERNATIONAL STUDIES

Director: Earl L. Blackman
Foreign Student Advisor: Marian Beane

The Program for International Studies, by offering a concentration, allows students to pursue an interdisciplinary and comparative study of foreign cultures and societies while they fulfill the academic requirements for a major in one of the approved University degree programs.

A concentration in international studies permits a wide variety of choice in subject matter and encourages course work in modern foreign languages, humanities, social sciences and international economics and business. Carefully selected programs should be designed to provide students with cultural and intellectual enrichment for more rewarding lives in an increasingly interdependent world. Such programs should also be of particular value to those with career objectives in government, business, trade, finance, law, health and environmental programs, international agencies such as the United Nations, private religious and humanitarian service organizations, journalism, teaching, research and military service.

Students seeking a concentration in international studies must fulfill general University degree requirements and requirements for a selected major. In addition, students are expected to complete a

minimum of eight courses in at least three departments outside their major.

A program of study fulfilling this option may be viewed from a variety of perspectives: topically, e.g. world population, poverty, violence, and war and peace futures; or geographically, e.g. Soviet Union, Eastern Europe, Africa, Asia and Latin America; or chronologically, e.g. ancient, medieval and modern. Students majoring in the following disciplines may earn a concentration in international studies.

Accounting
Anthropology
Architecture
Biology
Business Administration
Chemistry
Criminal Justice
Earth Science
Economics
Engineering Analysis and Design
Engineering Science, Mechanics and Materials
Engineering Technology
English
French
Geography
German
History
Human Development and Learning
Mathematics
Nursing
Philosophy
Physics
Political Science
Psychology
Religious Studies
Sociology
Spanish
Urban and Environmental Engineering

Creative ideas and leadership for the academic program are provided by the director and the International Studies Advisory Committee of faculty, students and staff representing the various cooperating departments. The International Studies Program also coordinates a variety of activities, events, travel options and other opportunities of international scope in order that students may participate in a broad range of experiences.

Students seeking certification in international studies shall plan programs with department advisers and the director of International Studies. The director will assist in the planning of a concentration, and review and approve all certification in International Studies. Transcripts of students satisfactorily completing their program will bear the statement, "Concentration in International Studies." To meet the requirements for the concentration, a student also must have at least a 2.0 average in the courses offered for it.

Lists of courses approved for credit toward a concentration in International Studies are available in the departments listed above or from the program director.

Travel and Study Abroad

The Program for International Studies offers UNCC students the opportunity to travel and study abroad either for a year, semester or summer term. Programs during the summer are arranged in a

variety of countries each year. A student should contact the Program for International Studies no later than March 30 to be considered for a summer travel/study program.

Students may study for a semester or an academic year in Copenhagen, Denmark through the Denmark International Student Committee Program. Approximately 35 courses are offered in liberal arts with specializations in Architecture, Social Welfare and Business Administration. Students of sophomore or junior standing are preferred and grade point average of 2.5 is required. Although no scholarships are available for this program, many students who are receiving financial aid during a regular academic year will be eligible to continue receiving aid while participating in this program.

Students desiring information on travel/study should contact the Program for International Studies.

PREPARATION FOR PROFESSIONAL SCHOOLS

Students may begin preparation at the University of North Carolina at Charlotte for a number of professional careers. Depending upon the professional school's requirements, the student may wish to take a degree at the University of North Carolina at Charlotte or to transfer after one, two or three years.

Preparation for the following programs is offered: Chemical Engineering, Dentistry, Forest Resources, Journalism, Law, Medical Technology, Medicine, Optometry, Pharmacy and Social Work.

The student who plans to enter a professional school is advised to plan his program so that general requirements for the Bachelor of Arts or Bachelor of Science degree are met in addition to the requirements for the professional program being considered. The student planning to attend a professional school should inform his adviser of his plans. The student should become familiar with the requirements of the school which he plans to attend.

Chemical Engineering

Students seeking a program in chemical engineering should consult the Department of Chemistry or the Department of Engineering Science, Mechanics and Materials for advice concerning available options. However, those students desiring to obtain the Bachelor of Science in Chemical Engineering degree may do so by transferring to North Carolina State University after spending two years at the University of North Carolina at Charlotte. To be eligible for such transfer, the student must meet the admissions requirements for transfer at North Carolina State University. Normally, after transfer an additional two to two and one-half years will be required for the degree.

The following courses are ones which most closely resemble courses suggested for Chemical Engineering students at North Carolina State University.

First Year:

Chemistry 101, 101L, 102, 102L
Engineering 101 BC, 102 ABC
English 102
Mathematics 105, 141, 142
Physical Education (2 semesters)
*Social Science and Humanities (2 semesters)

Second Year:

Chemistry 231, 231L, 232, 232L
Engineering Analysis & Design 268
Mathematics 241, 271
Physical Education (2 semesters)
Physics 221, 231, 251, 252
*Social Science and Humanities (1 semester)

The above represents a joint arrangement worked out by the Department of Chemical Engineering at North Carolina State University with the Department of Chemistry and the College of Engineering at the University of North Carolina at Charlotte. Students may enroll in either the College of Engineering or the College of Science and Mathematics to pursue such a program.

Dentistry and Medicine

The composite requirements for entrance to most medical and dental schools in North Carolina, South Carolina, Georgia, Tennessee and Virginia are as follows:

Biology	8 hours
Inorganic Chemistry	8 hours
Organic Chemistry	8 hours
Quantitative Analysis	4 hours
(Required by half the schools surveyed)	
Physics	8 hours
English	12 hours
Foreign Language	9-12 hours
(North and South Carolina only)	

Forest Resources

At UNCC students may take the first two years of a program leading to a bachelor's degree in forestry or recreation from North Carolina State University at Raleigh. To be eligible for transfer the student must meet the admissions requirements for transfer to North Carolina State University. It is suggested that pre-forestry students take Biology 211, 221, 361, and Natural Resources Management;

*A one semester course in each of the following areas is required. History, Economics, English Literature.

Chemistry 101, 102; Economics 201, 202; English 101, 102; Mathematics 103, 122, 141, 142; Physics 101, 102; physical education—4 hours; and social studies or humanities—6 hours. Students enrolling in recreation and park administration may substitute Mathematics 120, 122 for 141, 142 and are not required to take physics.

Journalism

A number of institutions accept graduate students in journalism with the background of a liberal arts degree. Other institutions accept students transferring to an undergraduate program at the junior year with a liberal arts background.

Law

The University suggests that the student planning to enter law school have an understanding of the value of English literature and composition, American history, psychology, logic and ethics, political sciences, economics, government, accounting, mathematics, sociology, Latin and modern languages, and Criminal Justice. Preparation should include comprehension and expression in words, critical understanding of human institutions and values, and creative power in thinking. Thus, any of several majors with wisely selected electives might provide the broad educational background needed.

Medical Technology

The University, through affiliation with several schools of medical technology, offers programs leading to baccalaureate degrees in biology and chemistry, with training in medical technology. Students interested in this four-year program are advised to check the more detailed listing under the individual departments and to consult with the appropriate adviser in the Department of Biology or Chemistry.

Optometry

Schools of optometry require a minimum of two years undergraduate study similar to the following two-year program listed for pharmacy. Advising for students interested in pre-optometry preparation is available in the Department of Physics.

Pharmacy

Students planning to seek a Bachelor of Science in Pharmacy degree may spend either one or two years at the University of North Carolina at Charlotte. One year is recommended for students transferring to a four-year pharmacy school; two years is recommended for students transferring to a three-year pharmacy school such as the University of North Carolina at Chapel Hill.

For the student planning to spend one year at the University of North Carolina at Charlotte, the following courses are required:

English	101, 102
Biology	101, 203, 203L
Mathematics	103, 103A, 141
Chemistry	101, 101L, 102, 102L

For the student planning to spend two years on the Charlotte campus, the following additional courses are required:

Chemistry	231, 231L, 232, 232L
Physics	101, 102
Biology	205, 205L
Economics	201
Physical Educations	(2 semesters of a sports related activity)
Social Science	(1 semester)
Humanities	(1 semester)
Mathematics Option:	Can be selected from one of the following; Mathematics 120, 122, 142, 221 or Computer Science 101.

The Pharmacy School at the University of North Carolina at Chapel Hill requires no additional foreign language than required for admission to the general college.

GRADUATE STUDIES

Master's Degree Programs:

The University of North Carolina at Charlotte currently offers 10 graduate degrees: Master of Business Administration, Master of Human Development and Learning, Master of Urban Administration, Master of Arts in Geography, Master of Arts in English, Master of Arts in History, Master of Arts in Mathematics, Master of Arts in Education in Mathematics, Master of Science in Chemistry and Master of Science in Biology.

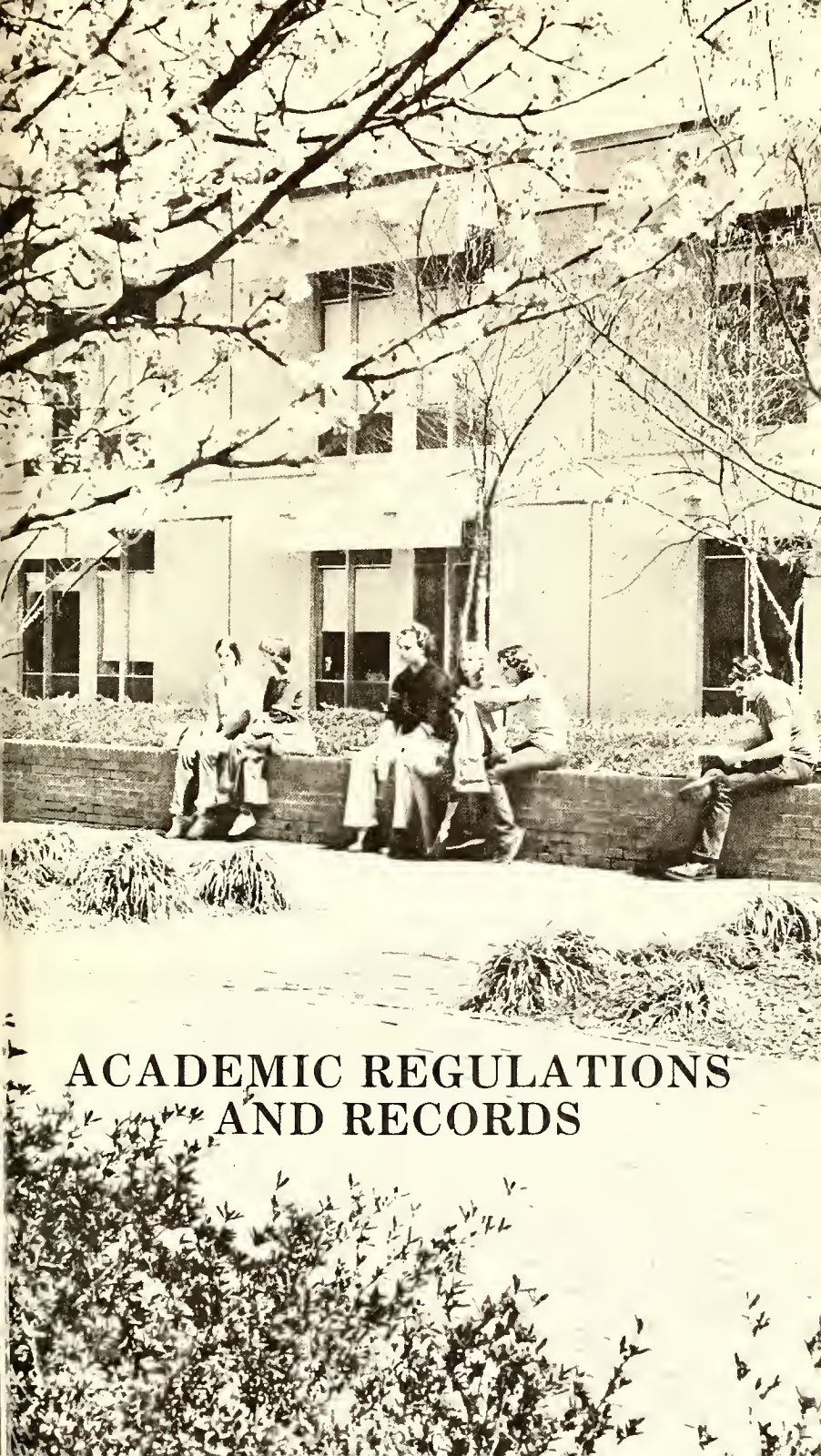
Admissions:

For admission to graduate study at the University of North Carolina at Charlotte, application must be made on a form supplied by the Director of Graduate Studies and accompanied by the specific application fee, three recommendations, an essay describing previous experience and objective in undertaking graduate study, and appropriate test scores as specified by each degree program.

In general, an applicant is expected to have an overall quality point average of 2.5 (on a 4.0 scale) on all work attempted beyond the high school with an average of 3.0 or better on the major or basic courses prerequisite to the area of proposed graduate study. Applicants for admission to programs leading to "G" certification will normally possess a valid North Carolina Class "A" Teacher's Certificate or be approved in advance.

The minimum number of semester hours required varies from 30 to 36 depending on the degree sought. Additional course work may be required in any program to remedy deficiencies in preparation or to meet specific professional objectives. At least half the work offered for the degree must be selected from courses open only to graduate students; the other half may be taken from courses open to advanced undergraduates or graduates.

For detailed information concerning the admissions and degree requirements specific to each program consult the current *Graduate Catalog* or contact the director of Graduate Studies.



ACADEMIC REGULATIONS AND RECORDS

*Grading—Undergraduate**

The unit of measurement of University work is the semester hour. It ordinarily represents one lecture hour per week for one semester; however, a sequence of two or three laboratory hours is considered to be the equivalent of one lecture hour.

Letters are used to indicate the quality of work done. Each letter carries a quality point value for each semester hour of work attempted. The meaning of each letter with its accompanying quality point factor is:

Letter	*Description*	*Quality Point Per Semester Hour*
A	Excellent	4
B	Good	3
C	Fair	2
D	Passing	1
F	Failing	0
I	Incomplete	**
W	Withdrawal	**
AU	Audit	**
NR	No recognition Given for Audit	**
	Pass/No Credit	
H	Honors	**
P	Passing	**
L	Low Passing (HDL courses only)	**
N	No Credit	**
	Honors	
HH	High Honors	4
HP	Honors Passing	**
N	No Credit	**
	Creative Arts *(No grade point average is computed.)*	
P	Progressing	
S	Satisfactory	
U	Unsatisfactory	

Grade of I

The Grade of *I* is assigned at the discretion of the instructor when a student who is otherwise passing has not completed all the work in the course. The missing work must be completed during the next semester in residence or within one calendar year after the end of the term in which the *I* was assigned, *whichever comes first.* If the *I* is not removed during the specified time, a grade of *F* is automatically

*For explanation of grading in the Bachelor of Creative Arts degree program, see page 200.
**Not used in computation of gradepoint averages.

assigned the grade of *I cannot* be removed by reenrolling in the same course.

Grade of W

No grade will be given for a course dropped on or before the last day to drop a course with refund. After this period but before the last day to drop without evaluation, a student who withdraws from a course will receive the grade of *W*. From that date until the deadline for dropping with evaluation, a student who withdraws from a course will receive the grade of *W* if passing at the time of withdrawal, or a grade of *F* (or *N* for those students enrolled *P/N*) if failing in the opinion of the instructor. Courses given the grade of *W* do not count as hours attempted. The time of withdrawal is the time the drop card is accepted by the Registrar's Office.

Quality Point Ratio

The quality point ratio at the University of North Carolina at Charlotte is determined by multiplying the number of quality points for each grade by the number of semester hours credit received in that course and adding all accumulated quality points together, then dividing by the total number of semester hours the student has attempted, except those for which the student has received a grade of *I, W, H, P, HP, AU,* or *N*. When a course is repeated, no additional credit hours attempted accrue, and the quality points of the previous grade are replaced by those of the current grade. In computing the quality point ratio, only those credits attempted at the campus of the University of North Carolina at Charlotte are included.

Grading—Graduate

A different grading system is employed in reporting performance in graduate studies. The system of grades which is authorized for graduate credit enrollment is published in the *Graduate Catalog.*

Grade Reports

A report of final grades is mailed to each student at the close of each term to the address designated by the student.

Parents and students are urged to confer with one another and arrive at a mutual understanding of the person and address to whom the grade reports are to be sent.

Midsemester Unsatisfactory Grades

Special reports of unsatisfactory achievement are sent to the students concerned near the middle of each regular semester.

*College of Engineering regulations differ

Transcripts of Records

Upon written request by the student, an official transcript of his academic record will be issued to the person or institution designated, provided that all the student's obligations to the University have been settled satisfactorily.

Each student is entitled to one transcript without cost, regardless of how early in his academic career the request may be made. A fee of $1 per copy should accompany subsequent requests.

Requests should reach the Registrar's Office at least one week before the date the transcript is needed.

Registration For Credit

Registration in any course is limited to the first week of a semester and the first three days of classes of a summer term. No credit will be given to a student for a course unless he is properly registered for it.

Assignment of Academic Advisers

Each student entering the University of North Carolina at Charlotte is assigned an adviser. Usually the adviser will be in the major field chosen by the student. Advisers are also supplied for those students who have not chosen a major field.

Changing of Degree and Major

A student may change degree or major objectives by filing and approved *Declaration of Program* at the Registrar's Office.

Course Load

A load of 15 semester hours constitutes a normal full semester program, but a student may register for less work. Any undergraduate student carrying 12 or more semester hours will be considered a full-time student by the University. A full load for graduate students consists of nine semester hours.

Course load is dependent on two factors: the scholastic ability of the student as reflected by his scholastic record, and available study time. It is suggested that a student whose part-time employment totals 20 hours a week should not carry more than 10 semester hours. A student working 40 hours a week should not carry more than seven semester hours.

*Adding or Dropping a Course**

In order to add or drop a course after the registration period, a student must secure written permission from his adviser and complete the necessary procedure as prescribed by the Registrar's

*College of Engineering regulations differ.

Office. No students will be permitted to add a course or change sections of a course after the first week of a semester or the first three days of classes in a summer term.

A student who withdraws from a course after the last day to receive a refund will receive a grade of *W*. A student who withdraws from a course after the last day to drop courses without grade evaluation will receive a grade of *W* if, in the opinion of his instructor, he is passing at the time of withdrawal, and will receive a grade of *F* if, in the opinion of his instructor, the student is failing the course at the time of withdrawal.

No Engineering student will be permitted to drop a course after the last day to drop a course without grade evaluation.

Withdrawal

Any student voluntarily leaving the University before the close of the term must withdraw officially. He initiates the withdrawal procedure at his major department and files the completed form at the Registrar's Office. A student who is unable to appear in person may notify the Registrar's Office of his withdrawal by a letter. (See Former Students, page 42.)

Any person who leaves the University before the close of a term without withdrawing officially will receive a grade of *F* in all courses for which he is registered.

Auditors

With the consent of the instructor, any person may audit a course. Students paying full-time fees are not charged additional fees. For others, fees are the same as if the course were being taken for University credit. The participation of auditors in class discussion and in tests or examinations is optional with the instructor. Though auditors receive no University credit, they are expected to attend classes regularly. A formal record of the audit on the student's transcript is entered at the discretion of the instructor at the end of the course. Adding or dropping an audit course is governed by the same procedures and administrative processes as adding or dropping a course for credit.

Transient Study

Course work undertaken by UNCC students at other accredited institutions may be transferred to the University, subject to the following regulations:

1. The University is not obligated to accept any credit from another institution unless the student has obtained the prior approval of the dean of the college in which he is enrolled. A Permit for Transient Study form should be completed and filed in the Registrar's Office.

2. No credit below *C* level will be accepted; no quality points transfer.

3. A limited number of correspondence and/or extension courses may be transferred.

Credit By Examination

A student currently enrolled at UNCC may pass a specially prepared examination and receive credit for a University course without having to do the normal course work. The examination will be designated by the appropriate department and will be administered either by the department or the Counseling Center. A receipt of payment of the examination fee (see p. 78) must be presented before taking the examination. Credit by examination will carry no quality points, and failures on such an examination will incur no quality-point penalty. A department may allow a student to take examinations for courses not then offered on the Charlotte campus, if it deems it appropriate to do so. Credit earned by examination cannot be used to meet residence requirements.

Challenge examinations in nursing courses are open to any student who is currently enrolled in the College of Nursing and who has had previous formal instruction in the subject area content for which he wishes to challenge for credit. Equivalency credit for nursing courses will be determined on the basis of written validation examinations in each clinical nursing course, and the applicant will be given credit only for those courses in which he attains a grade of *C* or better on the challenge examination. No challenge examination may be repeated. If an attempt at challenge is unsuccessful, the student will be required to enroll in the course for both theory and clinical laboratory experience. *No student may challenge a course for which he has already received a passing or failing grade at UNCC.*

Pass-No Credit Option

Every student will be permitted during his four undergraduate years to select a total of four courses in which he shall receive an evaluation of *H(honors), P(pass)* or *NC(no credit).* Only one such course will be selected during an academic year. Every course in the University is offered on this basis except when taken by a student for departmental credit toward his major or to satisfy all University degree requirements. Although units completed with *honors* or *pass* will count toward graduation, they will not be reckoned as part of the grade-point average.

This option is designed to encourage curiosity, exploration and experimentation in areas where a student has strong interests but little or no previous experience.

The student must declare his intention to take a Pass-No Credit option by the end of the add period in the semester.

Attendance

The instructional work of the University is designed for class attendance, and it is assumed that students will be present. Students who miss classes will be responsible for the work of those periods. A missed test may cost the student the advantage of a grade to be counted toward the final estimate since instructors are not required to give make-up tests.

No student may expect full credit unless he has attended at least 75 percent of the total class hours.

Classification of Students

At the beginning of the fall semester, regular students working toward a bachelor's degree are classified on the basis of minimum earned semester hours as follows:

Classification	*Earned Semester Hours*
Freshman	1-23
Sophomore	24-51
Junior	52-89
Senior	90 or more

Requirements for Continued Enrollment

In order to remain in good standing, the student's cumulative quality point ratio at UNCC must be 2.00 or higher. The quality point deficit is the number of additional quality points required to increase the student' cumulative QPR to 2.00. A student with a quality point deficit between one and 13 will be placed on academic probation. A student with a quality point deficit of more than 13 will be suspended, except as stated below.

A student will be suspended automatically if, after two successive semesters on probation (excluding summer sessions), he fails to achieve good standing, except as stated below.

No student shall be suspended at the end of the current semester if the student:

a. was in good standing at the end of his most recent semester of a regular academic year at UNCC, or

b. has a 2.50 QPR for the current semester, or

c. has not enrolled at UNCC in the last two calendar years prior to the beginning of the current semester.

As a general rule, the summer sessions at the University of North Carolina at Charlotte shall be open to all students previously enrolled here, including students academically ineligible to continue during the regular academic year.

In computing the quality point ratio, only those credits attempted at the campus of the University of North Carolina at Charlotte are included.

Requirements for Progression in Nursing Program

In order to promote the progression of safe practitioners from one level to the next within the College of Nursing and eventually into the nursing profession, students:

1. must achieve a minimum grade of *C* in *each nursing course.*

   a. Course grades reflect combined theoretical and clinical performance, neither component of which must be less than *C.*

   b. Only 4 hours of *D* credit in a natural science is acceptable for credit by the College of Nursing.

2. may not repeat a nursing course more than once. If a student repeats a nursing course and does not achieve the minimum of *C,* she will be asked to withdraw from the College of Nursing.

3. may not progress to the next level in the nursing curriculum until the pre-requisite nursing courses have been completed.

4. may not attempt junior level nursing courses until Sociology 151, a Sociology or anthropology elective, Psychology 101, Biology 101, 203, 205 and Chemistry 103 and 104 and sophomore level nursing courses have been completed and a 2.0 QPR has been earned, overall as well as a 2.0 QPR in the Nursing major.

5. may not attempt senior level nursing courses until all junior level nursing courses have been completed, including Psychology 307 and a 2.0 QPR has been earned, overall, as well as a 2.0 QPR in the Nursing major.

6. A student must achieve a 2.0 QPR in the nursing major to graduate.

7. Student may receive *I* in accordance with policy stated in UNCC catalog when confronted with personal or family crises.

Requirements for Removal of Academic Suspension

No student under suspension will be readmitted to the University if he does not completely satisfy the entrance requirements as stated elsewhere in this *Catalog.*

In addition, a student who has been suspended by reason of failure to satisfy the requirements for continued enrollment as stated above will be ineligible for readmission until the expiration of the next semester following his suspension (except that he will be permitted to enroll in the Summer Session) or until he meets the requirements for continued enrollment. If readmitted, he will be expected to satisfy the requirements for continued enrollment.

At the end of the semester in which the student fails to meet the requirements for continued enrollment for the second time, he will be suspended and may be readmitted only after meeting the requirements for continued enrollment.

The student has recourse for meeting the requirements for readmission by attending summer sessions at UNCC.

NOTE: Readmission after suspension or after an incomplete semester, whether caused by withdrawal or suspension, is not automatic. A new application must be made and approval to return must be received. Included in the approval must be an acceptance from the department in which the student would carry his major. See pages 42. *(Admission of Former Students.)*

Application for the Degree

Each student should make application for his degree on a form obtained from the Registrar's Office no later than the filing date specified in the University calendar. The application must be accompanied by the appropriate filing fee in effect at the time of the application. Degrees are awarded at Commencement exercises held at the end of the spring semester; however, the diploma and transcript will reflect the term in which all requirements were completed.

Student Responsibility

Every student is responsible for the proper completion of his academic program, for familiarity with the University *Catalog*, for maintaining the grade average required, and for meeting all other degree requirements, including attendance at the commencement exercises at which he will receive his diploma. His adviser will counsel him, but the final responsibility remains that of the student.

A student is required to have knowledge of and observe all regulations pertaining to campus life and student deportment. He is responsible for maintaining communication with the University, by keeping on file with the Registrar's Office at all times his current address, including ZIP Code, and telephone number.

Every student, while he is associated with the University, is expected to comport himself in campus and community life in a manner that will reflect credit upon himself and the University.

University Statement on Residency Status for TUITION Payment

Quotation verbatim of the current North Carolina law on this subject:

Article 14.

General Provisions as to Tuition and Fees in Certain State Institutions.

§ 116-143.1. Provisions for determining resident status for tuition purposes.—(a) As defined under this section:

(1) A "legal resident" or "resident" is a person who qualifies as a domiciliary of North Carolina; a "non-resident" is a person who does not qualify as a domiciliary of North Carolina.

(2) A "resident for tuition purposes" is a person who qualifies for the in-State tuition rate; a "non-resident for tuition purposes" is a person who does not qualify for the in-State tuition rate.

(3) "Institution of higher education" means any of the constituent institutions of The University of North Carolina and the community colleges and technical institutes under the jurisdiction of the North Carolina State Board of Education.

(b) To qualify as a resident for tuition purposes, a person must have established legal residence (domicile) in North Carolina and maintained that legal residence for at least 12 months immediately prior to his or her classification as a resident for tuition purposes. Every applicant for admission shall be required to make a statement as to his length of residence in the State.

(c) To be eligible for classification as a resident for tuition purposes, a person must establish that his or her presence in the State currently is, and during the requisite 12-month qualifying period was, for purposes of maintaining a bona fide domicile rather than of maintaining a mere temporary residence or abode incident to enrollment in an institution of higher education.

(d) An individual shall not be classified as a resident for tuition purposes and, thus, not rendered eligible to receive the in-State tuition rate, until he or she has provided such evidence related to legal residence and its duration as may be required by officials of the institution of higher education from which the individual seeks the in-State tuition rate.

(e) When an individual presents evidence that the individual has living parent(s) or court-appointed guardian of the person, the legal residence of such parent(s) or guardian shall be prima facie evidence of the individual's legal residence, which may be reinforced or rebutted relative to the age and general circumstances of the individual by the other evidence of legal residence required of or presented by the individual; provided, that the legal residence of an individual whose parents are domiciled outside this State shall not be prima facie evidence of the individual's legal residence if the

individual has lived in this State the five consecutive years prior to enrolling or re-registering at the institution of higher education at which resident status for tuition purposes is sought.

(f) In making domiciliary determinations related to the classification of persons as residents or non-residents for tuition purposes, the domicile of a married person, irrespective of sex, shall be determined, as in the case of an unmarried person, by reference to all relevant evidence of domiciliary intent. For purposes of this section:

(1) No person shall be precluded, solely by reason of marriage to a person domiciled outside North Carolina, from establishing or maintaining legal residence in North Carolina and subsequently qualifying or continuing to qualify as a resident for tuition purposes;

(2) No person shall be deemed, solely by reason of marriage to a person domiciled in North Carolina, to have established or maintained a legal residence in North Carolina and subsequently to have qualified or continued to qualify as a resident for tuition purposes;

(3) In determining the domicile of a married person, irrespective of sex, the fact of marriage and the place of domicile of his or her spouse shall be deemed relevant evidence to be considered in ascertaining domiciliary intent.

(g) Any non-resident person, irrespective of sex, who marries a legal resident of this State or marries one who later becomes a legal resident, may upon becoming a legal resident of this State, accede to the benefit of the spouse's immediately precedent duration as a legal resident for purposes of satisfying the 12-month durational requirement of this section.

(h) No person shall lose his or her resident status for tuition purposes solely by reason of serving in the armed forces outside this State.

(i) A person who, having acquired bona fide legal residence in North Carolina, has been classified as a resident for tuition purposes but who, while enrolled in a State institution of higher education, loses North Carolina legal residence, shall continue to enjoy the in-State tuition rate for a statutory grace period. This grace period shall be measured from the date on which the culminating circumstances arose that caused loss of legal residence and shall continue for 12 months; provided, that a resident's marriage to a person domiciled outside of North Carolina shall not be deemed a culminating circumstance even when said resident's spouse continues to be domiciled outside North Carolina; and provided, further, that if the 12-month period ends during a semester or academic term in which such a former resident is enrolled at a State institution of higher education, such grace period shall extend, in addition, to the end of that semester or academic term.

[Note. The 1975 Session Laws of the North Carolina General Assembly render G. S. 116-143.1 as amended effective upon its ratification, which was accomplished May 29, 1975.]

§116-143.2. Tuition of Indochina refugees.—Any alien paroled into the United States after March 31, 1975, under the United States Immigration and Nationality Act as a refugee or orphan from the Republic of Vietnam, Laos, or Cambodia shall, if properly admitted

to an institution of higher education as defined in G. S. 116-143.1, be eligible to be charged the in-State tuition rate immediately after completing 12 consecutive months presence in this State and continuing so long as the parolee abides in this State.

This act shall become effective upon ratification [June 16, 1977], and it shall expire absolutely on July 1, 1982; the act shall not apply to, and no person shall be eligible for the act's special circumstances in-State tuition rate for, any term or semester which will end after July 1, 1982.

Tuition and fees

Charges for tuition and fees vary according to the student's status as a resident or nonresident of North Carolina. A nonresident student must pay a higher rate of tuition than a legal resident.

Tuition and fees are due and payable on the day of registration. Checks and money orders should be made payable to the University of North Carolina at Charlotte.

Graduate students taking nine or more semester hours and undergraduate students taking 12 or more semester hours of work during a regular semester will be charged full tuition and fees. Students taking fewer than the nine hours for graduates and 12 hours for undergraduates will be charged a prorated portion of tuition and fees as specified in the application table.

Undergraduates

Cost Per Semester For Twelve or More Semester Hours	**Commuting Students*	*No. Carolina Resident Students*	*Out-of-State Resident Students*
Tuition	$155.00	$155.00	$1,021.00
General Fee	104.00	104.00	104.00
Room and Board	—	545.00	545.00
Total	$259.00	$804.00	$1,670.00

Cost Per Semester For Nine to Eleven Semester Hours	**No. Carolina Students*	*Out-of-State Students*
Tuition	$116.00	$766.00
General Fee	104.00	104.00
Total	$220.00	$870.00

Cost Per Semester For Six to Eight Semester Hours	**No. Carolina Students*	*Out-of-State Students*
Tuition	$ 78.00	$511.00
General Fee	40.00	40.00
Total	$118.00	$551.00

Cost Per Semester One to Five Semester Hours	**No. Carolina Students*	*Out-of-State Students*
Tuition	$ 39.00	$255.00
General Fee	15.00	15.00
Total	$ 54.00	$270.00

NOTE: Residence hall space is not available to students taking fewer than 12 semester hours.
All new full-time UNCC students (freshman or transfers) will be required to pay a one-time $7 orientation fee.
Tuition and fees listed here are subject to change.

*The commuting student will not have the cost of room and board but should estimate his cost of travel to and from the campus. Out-of-state commuting students should use the cost of tuition listed in the third column in computing their total expenses each semester.

**The listing for room and board given above is for the seven day plan. In addition, the University offers a five day room and board plan available at a cost of $520.00.

Graduates

Cost Per Semester For Nine or More Semester Hours	**Commuting Students*	*No. Carolina Resident Students*	*Out-of-State Resident Students*
Tuition	$155.00	$155.00	$1,021.00
General Fee	104.00	104.00	104.00
**Room and Board		545.00	545.00
Total	$259.00	$804.00	$1,670.00

Semester Hours

Tuition:	1	2	3	4	5	6	7	8
Instate	23.00	46.00	69.00	92.00	115.00	138.00	155.00	155.00
Out-of-State	255.00	255.00	511.00	511.00	511.00	766.00	766.00	766.00
Fees	15.00	15.00	15.00	15.00	15.00	40.00	40.00	40.00
Total Tuition and Fees								
Instate	38.00	61.00	84.00	107.00	130.00	178.00	195.00	195.00
Out-of-State	270.00	270.00	526.00	526.00	526.00	806.00	806.00	806.00

NOTE: Residence hall space is not available to students taking fewer than 12 semester hours.
All new full-time UNCC students (freshman or transfers) will be required to pay a one-time $7 orientation fee.
Tuition and fees listed here are subject to change.

Additional Expenses

No extra fees are charged for laboratories as such. However, all degree students in the Creative Arts program are charged a flat fee of $45 per semester. All students enrolled in Directed Projects in the Department of Creative Arts are charged $25 per semester. All students enrolled in Scuba Diving are charged $45.00 per semester.

The estimated average cost of books and supplies per semester is $65. Beginning students in architecture and engineering should allow an additional expense of $60-$75 for drawing instruments, slide rule and supplies. Uniforms and supplies for nurses will cost approximately $100.

In addition to the above, the student should take into consideration the cost of clothing, snacks, recreation, laundry, etc. in planning his expenses for each semester.

The University reserves the right to make, with the approval of proper authorities, changes in tuition and fees at any time.

*The commuting student will not have the cost of room and board but should estimate his cost of travel to and from the campus. Out-of-state commuting students should use the cost of tuition listed in the third column in computing their total expenses each semester.

**The listing for room and board given above is for the seven day plan. In addition, the University offers a five-day room and board plan available at a cost of $520.00.

Housing

Admission to UNCC does not guarantee residence hall space. Arrangements for on-campus housing are made after admission with the Director of Residence Life. See the Correspondence Directory on the inside front cover for the proper address.

All housing applications for the full academic year must be submitted with a $50 pre-payment. This pre-payment is applied to spring semester room and board charges unless the student cancels his application for the spring semester by December 10, in which case, the $50 will be refunded. No refunds for fall semester reservations are made after July 1.

Application Fee

Applicants for admission are required to submit a $10 application fee with the application form. The fee is not deductible and is not refundable.

Late Registration Fee

A fee of $10 will be charged for those registering after the designated registration period each semester. *The fee is not refundable.*

Applicants completing their applications before the initial registration day but whose applications could not be processed in time will not be assessed the late registration fee if required to register late.

Graduation Fee

Each member of the graduating class must pay a graduation fee of $18 at the time he applies for the degree. This fee includes the cost of the diploma and the rental of the cap and gown. No reduction of the fee is allowed for those receiving degrees *in absentia*. For graduate students, the cost of renting a hood is in addition to the $18 charge.

Registration of Motor Vehicles

Any student attending the University is required to register his motor vehicle(s) in order to park such vehicle(s) on campus. Only vehicles owned by the student, his spouse, his parent(s), or his guardian may be registered. Unless increased by the chancellor, the number of vehicles which a student may register is two.

Registration of motor vehicles is to be accomplished as part of the University registration at the beginning of the fall semester of each year or at the time when the student first registers in the University and at the beginning of the fall semester of each year thereafter. A motor vehicle acquired by a student during a semester is to be registered.

Motor Vehicle Registration Fee

The motor vehicle registration fee for students, faculty and staff members is as follows:*

$30 per academic year beginning with the fall semester.
$18 for the period beginning with the spring semester and ending with the beginning of the next fall semester;
$12 for the period beginning with a summer term and ending with the beginning of the next fall semester;
$ 2 for one additional motor vehicle;
$ 1 for replacing lost or defaced permit.

Violators of University Parking Regulations will incur a civil penalty of $1.00, $3.00 or $5.00, depending on the seriousness of the violation. If not paid in five days, the penalty will be doubled and applied to the member's account with the University and collectable as a bad debt. Subsequent registration may be withheld for non-payment.

Temporary Parking Permits

Temporary parking permits are available for persons with cars registered on campus who are required to drive a non-registered car for a short period while the registered car is being repaired, for new employees prior to receipt of first pay check, and short-term visitors of resident students.

Credit By Examination Fee

Fees for credit by examination are as follows: A written examination for a course will require a fee of $15. A laboratory examination requiring the arrangement of such things as laboratory materials will require a fee of $25. A combination of a laboratory and written examination will require a fee of $30.

Student Activities Fee

A part of the general fee provides students with a program of cultural, recreational and entertainment activities. It pays for admission to most athletic contests, dramatic productions, activities sponsored by the University Program Board, social and entertainment functions, and for subscriptions to the campus newspaper and literary magazine. The yearbook is provided free to all students taking nine or more semester hours of work each semester during the academic year. Other students may obtain a yearbook upon payment of $8.50.

Refunds

A student who officially withdraws from the University will receive a refund as follows:

*Fees are subject to change.

a. During the first two weeks of the semeste a 90 percent refund of tuition and fees.

b. During the third and fourth week of the semester a 40 percent refund of tuition and fees.

c. After the first four weeks, tuition and fees are not refundable.

Exception: After four weeks charges are refundable by administrative action on a prorata basis for the unexpired portion of the term for the following reasons: death of the student, withdrawal for adequate medical reason as certified by the University Student Health Center or family doctor, death in the immediate family which necessitates student withdrawing and dismissal or suspension from school.

Summer School: A student who officially withdraws from the University as indicated below will receive a refund of the full amount paid less a registration fee of $10.00: regular summer session during the first *five* class days; three week session during the first *three* class days; two week session during the first *two* class days. No other refunds are authorized except as follows: death of student, withdrawal for adequate medical reason as certified by the University Student Health Center or family doctor, death in the immediate family which necessitates student withdrawing and dismissal or suspension from school.

Housing Refunds

The rental period is for the entire academic year (Fall and Spring semesters) continuing until the end of the Spring semester regardless of occupancy date after the Fall semester begins. Students may terminate at the end of the Fall semester with no penalty only by written notification to the Residence Life Office by December 10. The housing and dining agreement binds the student and/or guarantor to the full amount of charges for the academic year except as noted below:

a) Prior to July 1 for the Fall semester and December 10 for the Spring semester, an agreement can be cancelled and full refunds made upon written notification to the Residence Life Office. If a student cancels after these dates, and up until the day prior to the published opening date of the residence halls for the appropriate semester, he/she will forfeit the $50 prepayment.

b) If cancellation is completed between the day prior to this published opening date of the residence halls and the end of the second week of classes for the semester, and another student contracts for that space, the student will be charged $50 in addition to forfeiture of the $50 housing prepayment. Also, dining charges will be made on a weekly pro-rata basis.

c) If cancellation is completed after the first two weeks of classes for the semester and another student contracts for that space, the student will be charged $50 for housing, in addition to forfeiture of the $50 housing prepayment, plus pro-rata share of housing

and dining based upon a weekly amount up through week of cancellation or check-out.

d) If a student cancels on or after the day prior to the published opening date of the residence halls and *no other student contracts for that space*, he/she will be held responsible for the full semester's debt service charges for housing and dining ($100) plus forfeiture of $50 prepayment and any weekly prorata charges for housing and dining up through the week of cancellation or check-out.

Education For The Vocationally Handicapped

Students who have suffered a disability which renders them vocationally handicapped are eligible for aid provided by the North Carolina State Division of Vocational Rehabilitation. This aid takes the form of services which include vocational counseling and guidance and placement. Payment of expenses such as training, medical treatment, room and board, books, fees and tuition may be available. A vocational rehabilitation officer is available in Charlotte for interviewing applicants. Appointments may be made by contacting the Vocational Rehabilitation Office located at 219 East Boulevard, 375-8686.

Veterans Benefits

The Office of the Registrar works with the Veterans Administration to assist in administering the various programs of benefit to veterans or eligible relatives of veterans. The veterans clerk in the Registrar's Office certifies enrollment and transmits necessary credentials and information to the proper Veterans Administrative Office.

Admission to the University should be obtained before the student makes application for veteran's benefits. Application for a Certificate of Eligibility should be made to the nearest Veterans Administration Regional Office at least six weeks before the expected date of enrollment.

In order to be eligible for the full monthly allowance under any of the above laws, an undergraduate student must be enrolled for 12 or more semester hours of work, while a graduate student must be enrolled for nine or more semester hours. Those enrolled for fewer semester hours than the limits stated above will be eligible for part-time compensation. Students are responsible for reporting any change in enrollment status to the veterans clerk in the Office of the Registrar.

Children of Veterans

The North Carolina Department of Veterans Affairs awards scholarships for the children of certain deceased or disabled veterans. Those awarded "full" scholarships are entitled to tuition,

mandatory fees, board allowance and room allowance; those awarded "limited" scholarships are entitled to tuition and mandatory fees. All inquiries should be referred to the North Carolina Department of Veterans Affairs, P.O. Box 26206, Raleigh, North Carolina 27611, telephone, Raleigh 829-3851.

Before the time of registration each eligible student who wishes to enter the University should:

1. Make application for admission following University procedures.

2. Make application for scholarship award to the North Carolina Department of Veterans Affairs.

Financial Aid

Financial assistance is available to students of the University in several forms: scholarships, grants-in-aid, loans and part-time employment. The University makes every effort within the limits of its available resources to encourage and assist students with seriousness of purpose to obtain a University education. A financial problem should not deter a student from submitting an application for admission.

How to Apply

To be considered for financial aid at the University of North Carolina at Charlotte, a student must file a University application for financial aid, a Confidential Financial Statement, a Basic Educational Opportunity Grant application, and be accepted for admission to the University. The University application for financial aid may be obtained from the Student Aid Office. A Confidential Financial Statement and BEOG application are available through the guidance counselors of all high schools or from the Student Aid Office of the University. The University subscribes to the principle that the amount of financial aid granted a student should be based upon financial need. All students seeking financial assistance are required to submit a copy of the Financial Aid Form to the College Scholarship Service, designating the University of North Carolina at Charlotte as one of the recipients. The institutional application and the Financial Aid Form should be submitted prior to April 1 in order to assure that they can be processed in time for an award to be made before fall registration. Any student submitting the required forms will be automatically considered for all types of financial aid which are available through the University.

The University seeks to assign the kind of aid best suited to the needs and qualifications of the student. In general, awards are approved and announced proportionate to the demonstrated need of the student and his satisfactory record of achievement. All students will be given consideration regardless of race, creed, color, sex, age, or national origin.

Renewal of Financial Aid

Renewal of financial aid is based upon a student's making a clearly satisfactory record. After enrollment, the student must make application by April 1 for financial aid in the next year. The Financial Aid Form and BEOG application will be required each year that a student applies for financial aid.

Loans

The Emergency Loan Fund—Students may borrow to $25.00 for 30 days. There is a $.25 service charge, but no interest is charged on the loan. Students may borrow up to $100.00 for 60 days at an interest rate of three percent per annum.

The Marlin McCasland Memorial Emergency Loan Fund—This fund, established by friends of Marlin McCasland, a deceased former student, as a memorial, is for the purpose of making emergency loans up to $25.00 for 30 days. There is a $.25 service charge, but no interest is charged on the loan.

The Student Financial Services—This office, financed and operated by the Student Body Government, offers short-term loans and check cashing privileges.

Federally Insured Student Loans and Guaranteed Student Loans—Qualified applicants may borrow up to $2,500.00 per year for educational expenses. The interest rate throughout the life of the loan is seven per cent per annum, simple interest. Borrowers whose adjusted family income is less than $25,000 are eligible for payment of the seven per cent interest by the federal government during the in-school, grace and authorized extension periods. Repayment begins on a date between nine and 12 months after a student completes his course of study or leaves school. The maximum repayment period is 10 years, although minimum repayment requirements may reduce this.

The North Carolina Student Incentive Grant (NCSIG) is funded by Federal and State appropriations. NCSIG awards are based on need as determined by a need analysis performed by the American College Testing Program (ACT) or The College Scholarship Service (CSS).

The Prospective Teachers Scholarship Loan Fund provides funds for prospective teachers each year./ The loans are made in the amount of not more than $900. The fund is administered by the State Superintendent of Public Instruction, Raleigh, North Carolina. All scholarship loans are evidenced by notes which bear interest at the rate of four percent per annum from September 1 following fulfillment by a prospective teacher of the requirements for a teacher's certificate based upon the bachelor's degree. Scholarship loans, together with four per cent thereon, may be cancelled by teaching one full year in North Carolina for each annual scholarship received. Consideration for a scholarship loan is given on the basis of the aptitude, purposefulness, scholarship, character and financial need of the applicant. For detailed information about the program, write

to Prospective Teachers Scholarship Loan Fund, State Department of Public Instruction, Raleigh, North Carolina.

Basic Educational Opportunity Grant (BEOG)

The Education Amendments of 1972 authorized a program of financial aid known as the Basic Educational Opportunity Grant. It is expected to provide awards to students of up to $1,600.00 for each undergraduate year. However, the grant cannot exceed the need of the student nor can it be for more than 50 per cent of the actual costs of attendance at the institution the student has chosen. Therefore, full entitlement at the University of North Carolina at Charlotte may be somewhat less than the prescribed $1,600.00.

Applications are available on request from the Financial Aid Office. Beginning in the 1978-79 school year, a student may file a BEOG application and FAF on the same form.

All undergraduate students will be required to apply for BEOG before consideration can be given to any application for University controlled funds.

Scholarships

UNCC currently offers 94 scholarships. Some of these are awarded entirely on the basis of merit, but individual financial need is a consideration in the awarding of many of them. The University's major merit scholarships are the Alumni Merit Scholarships, the Colvard Merit Scholarships, and the Bonnie E. Cone Merit Scholarships.

The *Alumni Merit Scholarships*, awarded for the first time in 1978, will be awarded annually to continuing students of the University who have proven outstanding scholastic attainment, participated in University and/or community activities, and demonstrated campus leadership. The scholarships were established to recognize outstanding full-time students and to encourage their continuing involvement and interest in the activities of the University. Information concerning the scholarships will be distributed to each department and college within the University each year prior to the award and will contain material outlining application procedures for the scholarships.

The *Colvard Merit Scholarships* honor Dr. Dean Wallace Colvard, first chancellor of the University of North Carolina at Charlotte, and his wife, Martha, who was instrumental in founding the Friends of UNCC. Dr. and Mrs. Colvard have personified the quest for excellence at UNCC. Thus it is uniquely appropriate that their contribution to the University be given permanent recognition. Chancellor Colvard came to the institution in 1966, when its enrollment was 1,715, and has seen that enrollment multiplied by five. However, his major emphasis was not upon numbers but upon quality. It was his insistence upon excellence that makes it entirely appropriate that a scholarship program based on merit be used to honor the contributions he and Mrs. Colvard have made to the University and the State.

Before he was appointed chancellor at UNCC, Dr. Colvard had served as a dean at North Carolina State University and as president of Mississippi State University. It is significant that both institutions made substantial strides toward excellence and achieved a measure of national prominence during the period in which he served.

The Colvard Merit Scholarships will be awarded to applicants judged on the basis of their achievements in high school, college aptitude tests, and their promise of making meaningful contributions to society. Their roles as leaders and their service to school and community will be weighed carefully. The scholarships will cover tuition, room and board, and fees. Colvard Scholars will be required to maintain high academic standards while attending UNCC.

Detailed information about minimum qualifications, the selection process, and the amount of the stipend may be obtained from the Office of Student Financial Aid at the University of North Carolina at Charlotte.

The *Bonnie E. Cone Merit Scholarship* is awarded annually to students having high moral character and proven scholastic attainment and whose further education at the University will, in the judgment of the scholarship committee, enhance the citizenship of the recipient and advance the service of the University of North Carolina at Charlotte as an institution of excellence. A student may be recommended by the high school principal or community college president to be eligible for this scholarship.

In most cases, there is no special application for the scholarships which follow, and all aid applicants will be considered unless the scholarship is noted as an exception. Normally, those students with demonstrated need and a grade point average of 3.5 or better will be considered for scholarships.

**Alcoa Foundation
Allendale Services, Inc.
Alpha Chapter of Alpha Delta Kappa
Alpha Sigma Chapter of Delta Kappa Gamma
Altrusa Club of Charlotte
American Business Woman—Charlotte Heritage Chapter
American Business Women—Carolina Charter Chapter
American Business Women—Mecklenburg Chapter
American Business Women—Queen Charlotte Chapter
American Society for Metals
**American Society for Quality Control
Paul Anthony Memorial Scholarship
J. Murrey Atkins Scholarship
Brycie Baber Scholarship
Harold Crusius Bird
*Blair-Boone Scholarship Fund
Cannon Scholarship for Nursing
Carolina Yarn Association
Carolina Paper Board

Charlotte Association of Insurance Women
Charlotte Board of Realtors
Charlotte Business and Professional Women
Charlotte-Mecklenburg—NCEA
Charlotte North Rotary Club Student Loan Fund
Charlotte Panhellenic Congress
The Charlotte Women's Auxiliary of the NC Pharmaceutical Association
Bonnie E. Cone Scholarship
Jim Crockett Memorial Loan
**Sanford V. Davenport Scholarship
W. Cleveland Davis Scholarship
*Charles C. Dudley Scholarship
Engraph, Inc.
**Ernst & Ernst Achievement Scholarship
Executives' Secretaries, Inc.
Henry B. Fowler Memorial
Otto L. Giersch Scholarship
**Joris E. Gilbos French Scholarship
**Joris E. Gilbos German Scholarship
Miley Columbus Glover Memorial
Harry P. Harding Scholarship
*Bronna Watson Hackney Senior Nursing Honors Scholarship
Harrison-Wright Scholarship
**Haskins & Sells Scholarship
David Henderson Memorial
Housewares Club of the Carolinas Loan Fund
**Jefferson Standard Foundation Scholarship
Jeld-Wen-Wenco Scholarship
**Kokenes Award
Lincoln/Jewell, Inc. Insurance Scholarship Fund
McEwen Scholarship
**Pierre Macy Scholarship
William Hugh McEniry Memorial
Mecklenburg Junior Chamber of Commerce
Mecklenburg County Medical Society
Metrolina World Trade Club
Mumaw Engineering
Mutual Savings and Loan of Charlotte, N.C., Scholarship in Business Administration
**National Association of Accountants—Herbert Conner Scholarship
**North Carolina Association of the American Institute of Certified Public Accountants—Charlotte Chapter
The Artemis J. Paschal Scholarship Fund
**Peat, Marwick, Mitchell Accounting Scholarship
Piedmont-Carolinas Chapter of the Institute of Internal Auditors
Pilot Club of Charlotte
**Price Waterhouse Foundation
Cecil Prince Scholarship
**Professional Engineers Association—South Piedmont Chapter
**Professional Engineers—Ladies Auxiliary
Puette Scholarship
Quota Club of Charlotte
The Ramseur Tutoring Fund

George A. Rawlings Scholarship
Refabco, Inc. Scholarship
George H. Roberts
Glenn G. Ritchie, Jr. Memorial Scholarship
**Rodgers Builders, Inc. Scholarship
Schoenith Scholarship-Loan
Servomation of Charlotte
**Sheldon P. Smith Scholarship
Lonnie Sides Memorial
Joseph Carl Stepp Memorial
Charles H. and Clara Stone Scholarship
A. K. Sutton Scholarship
F. Michael Thomas Loan Fund
Mr. and Mrs. J. R. Thompson
*Tate-Culbertson Scholarship for Black Students
UNCC Distaff Loan Fund
UNCC Bookstore Scholarship
Earle Whitton Scholarship
Mr. and Mrs. J. L. Winningham
Women in Construction of Charlotte
Women's Allied Auxiliary of N. C. Motor Carriers
Zonta Club of Charlotte

Employment

The Office of Student Aid assists the student in locating work on campus during his undergraduate years as part of the program of financial assistance. The University participates in the Federal Work-Study program and often couples part-time work with scholarship or loan assistance to meet the financial need of a student.

The Placement Office assists the student in obtaining part-time, full-time or summer employment off campus and, whenever possible, endeavors to relate work experience to career objectives. (See more detailed statement under *Placement* pages 31-32.)

*Students will be informed of their eligibility to apply for these scholarships.
**These scholarships are awarded on recommendation by committees in the academic departments.

COURSES OF STUDY

Courses of Study

Following are courses offered by the University of North Carolina at Charlotte, listed by colleges and under the department or academic area concerned.

Courses are listed with a course number, the title of the course, the semester hours credit given in parentheses, prerequisites, if any, and a description of the subject matter of the course, with whatever requirements of class or laboratory hours are applicable. If no class hours are given, the number of class sessions per week is the same as the number of semester hours credit for the course.

Courses are, in general, numbered 100-199 for freshmen, 200-299 for sophomores, 300-399 for juniors and 400-499 for seniors. However, prerequisites for each course must be consulted to determine the student's eligibility to take that course.

Where a suggested degree program is not listed by a particular department, the student must arrange his program in consultation with the department. However, every student should consult the department of his intended major to be certain that he is following an approved program which will enable him to progress logically and successfully to the conclusion of his degree program, and to fulfill the requirements of both the University and the major department or professional sequence.

Students intending to teach should consult both the major department and the College of Human Development and Learning.

College of Architecture

Dean: Professor Hight
Professors: Anderson, Langhorst, Melaragno
Associate Professors: Gallis, Morgan, Vollendorf
Assistant Professors: Sauda, Lucas, Incze, Moore, Nelson
Visiting Associate Professor: Peterson
Part-time Lecturers: Egan, Ainscough, Ferebee, Ross, Hixson

Our society's increasing concern for environmental quality and realization of the fact we live in a world of finite resources provides the architectural profession with the opportunity to be engaged in research and programming, as well as the planning and design of our buildings, building complexes, cities and other elements of the built environment.

The College believes humane, economically sound and visually stimulating cities and buildings can only be obtained through sensitive and creative meshing of the physical, societal, psychological, ecological, technical and visual determinants of environmental planning and design.

Therefore, the College of Architecture seeks to stimulate a sense of inquiry within each student and develop the individual's techniques of problem identification and solving. As process and product are viewed as being equally important and interrelated, the COA believes students must possess the necessary verbal and visual communication skills for examining environmental issues, testing ideas and communicating with others, as well as being equally proficient at analysis and synthesis.

In order for students to receive individual attention, the student-faculty ratio is kept as low as reasonable, and the faculty is composed of persons with a broad range of knowledge, skills and philosophies. In addition to the full-time faculty, a number of local practitioners participate as part-time instructors and a rather extensive visiting lecture series is provided.

Located in the major and most rapidly growing metropolitan area of the Carolinas, the College is able to incorporate community assistance projects into the educational program, and students may observe major buildings under construction, evaluate recently completed building complexes and examine the urbanization phenomena.

The program is organized into a four-year segment (Bachelor of Arts in Architecture degree), followed by a one-year segment (Bachelor of Architecture degree).

Bachelor of Arts in Architecture: This four-year program requires 135 semester hours including 48 hours architectural studio, 34 hours of other architectural courses, and 53 hours of general and elective courses. It is structured into the Architectural Foundation Program (first and second years), and the Architectural Development Program (third and fourth years). Whereas, the Foundation Program's purpose is to provide all students with the information and skills required of all persons involved in the planning and designs of our physical environment, the Development Program provides students with educational alternatives, i.e., they may select from a series of different studio/seminar and lecture/seminar experiences.

The intention is to provide an educational milieu so that graduates will possess the following knowledge and abilities:

1. Identify environmental problems and their boundaries including user-societal goals, needs, values, priorities, resources and their interrelationships between the determinants.

2. Discriminate what is, and what is not relevant, as well as learn to organize the collected information into a format so that it can be used to achieve meaningful results.

3. Capacity to abstract ideas and concepts and apply the gained knowledge to different situations.

4. Generate significant alternatives, i.e., in terms of policies, strategies, organizations and forms.

5. Develop various graphic and non-graphic simulation techniques in order to evaluate alternatives, predict consequences, and communicate with others.

6. Understand humanistic (social, psychological, physical) needs and values and their relationships with the built environment.

7. Creatively perform systematic and intuitive analysis and synthesis of environmental problems, including examining the what, where, why and how of a problem.

8. Understand the qualitative and basic quantitative characteristics of buildings systems and their relationship to space-movement organizations.

9. A strong sense of self-discovery and expression, as well as an attitude of participating in establishing society's priorities.

Graduates of the B. A. in Architecture program are eligible for admission into the professional program, or they may pursue graduate study in related fields such as planning, urban design, landscape architecture or other environmental design/planning programs.

Bachelor of Architecture: Admission requires an architectural or environmental related degree and acceptance into the College. The

program requires 32 semester credit hours, including 14 hours of architectural studio, 12 hours of other architectural courses and six hours of electives.

The College seeks its Bachelor of Architecture graduates to possess the following attributes:

1. A more fully developed understanding, knowledge and skills noted in the Bachelor of Arts program.

2. Ability to investigate and understand selected architectural issues.

3. General understanding of architectural practice, including its present and projected trends and developments.

4. Possession of a rather in-depth understanding of an architectural subject through elective course study and its integration with the studio experience which emphasizes self direction.

So that students receive a general and comprehensive architectural education, the following discrete, but related teaching-learning experiences, are provided:

The Architectural Studio/Seminar: Besides providing both analytical and synthetic experiences and the opportunity to pursue intense study of physical-environmental related subject(s), these courses create a linkage between the humanistic, physical phenomena, social-psychological behavioral, and perceptional studies.

The Architectural History Lectures: Their purpose is to develop an understanding of the relationships between culture and their physical manifestations.

The Architectural Technology Courses: To provide the student with a basic quantitative, as well as continuation of qualitative, behavior of structural and environmental control systems.

The Architectural Lecture/Seminar Electives: Through these courses students will be able to develop a rather in-depth understanding of an architectural subject(s).

Independent Studies: When appropriate, a student may pursue a self-directed, faculty approved study, of a particular and significant architectural topic or subject.

General University Requirements: While the College has designated credit hours which must be taken in specific courses, an additional 10 hours are to be chosen by the student in accordance with his or her specific educational objectives.

Directed Electives: In order for a student to achieve a significant level of competence and understanding in a selected area or to achieve a comprehensive education, 35 hours of elective study are

required for the Bachelor of Arts in Architecture, and an additional six hours are required for the Bachelor of Architecture degree. These courses must be selected in accordance with a student selected, faculty approved plan of study.

The Faculty Advisory Program: Major emphasis is given to a system of faculty advising as basic doctrine of the COA's program in an orchestration of architectural courses with general required courses and selection of general electives based upon the student's educational objectives.

Dual Degree Option: It is possible for students to pursue a double degree program after the freshman year. Thus, in addition to architecture, a student may pursue a major study in a selected discipline such as history, engineering, business management, social sciences, etc. Any arrangement must meet the University's and college's requirements. The Dual Degree Program shall be structured beforehand in consultation with a faculty adviser and approved by the dean.

Study Abroad Program: Arrangements have been made for students to spend one or two semesters with the University of Copenhagen in Denmark and receive college credit.

B. A. in Architecture Academic Standards: A grade of *C* is the minimum passing grade in studio. Any student receiving less than a grade of *C* when repeating a studio course will be expelled from the COA. In order to graduate, an overall grade point average of 2.0 must be achieved in all required courses offered by the College of Architecture.

Bachelor of Architecture Academic Standards: A grade of *C* is the minimum passing grade in studio. Any student receiving less than a grade of *C* when repeating a studio course will be expelled from the COA. In order to graduate, an overall grade point of 2.50 must be achieved in all the B. Architecture required courses offered by the College of Architecture.

THE FOUNDATION PROGRAM

First Year

ARC 101	7	ARC 102	7
ENG 101	3	ARC 104	1
PHY 101	4	ENG 102	3
MAT 120	3	ES 370	3
	—	Mat. Elective	3*
	17		—
			17

Second Year

ARC 201	7	ARC 202	7
ARC 211	3	ARC 212	3
Nat. Sci. Elect.	4*	Soc. Sci. Elect.	3*
General Elect.	3*	General Elect.	3*
	—		—
	17		16

THE ARCHITECTURAL DEVELOPMENT PROGRAM

Third Year

ARC 301	5	ARC 302	5
ARC 311	3	ARC 322	3
ARC 321	3	ARC Elective	3*
ARC Elective	3*	General Elect.	3*
General Elect.	3*	General Elect.	3*
	—		—
	17		17

Fourth Year

ARC 401	5	ARC 402	5*
ARC 421	3	ARC 422	3
ARC Elective	3*	ARC Elective	3*
General Elect.	3*	General Elect.	3*
General Elect.	3*	General Elect.	3*
	—		—
	17		17

B.A. in Architecture: 135 hours.

**Courses to be selected in accordance with program of studies developed with and approved by the faculty advisor.*

Fifth Year

ARC 501	7	ARC 502	7
ARC 504	3	ARC 508	3
ARC 505	3	ARC 506	3
General Elect.	3*	General Elect.	3*
	16		16

Bachelor of Architecture: 32 hours

COURSE DESCRIPTIONS

BACHELOR OF ARTS IN ARCHITECTURE

Studio Courses

ARC 101. COMPREHENSIVE STUDIO. 7 credit hours/15 contact hours. Prerequisite: major in Architecture or consent of the dean. Network of lectures, seminars and laboratories dealing with visual ordering systems, environmental design issues, and creative problem identification-solving processes, as well as visual and verbal communication skills development.

ARC 102. COMPREHENSIVE STUDIO. 7 credit hours/15 contact hours. Prerequisite: major in Architecture or consent of the dean, and ARC 101. Similar to 101 but with emphasis upon examination of structural and other geophysical qualitative characteristics and their relationship with formal-spatial-movement organization.

ARC 104. PROFESSIONAL OPTIONS AND DEVELOPMENT. 1 credit hour/1 contact hour. Examination of major architectural movements, career options and opportunities, discussions of personal goal setting, and counseling on establishment of each student's program of study.

ARC 201. COMPREHENSIVE STUDIO. 7 credit hours/15 contact hours. Prerequisite: major in Architecture, ARC 102, 104. Network of lectures, seminars and laboratories with emphasis upon the human needs (sociological, psychological and physiological) and values and their relationships with spatial and form organizatio n and design. Student exposed to several programming design methodologies and examination of historical precedents.

ARC 202. COMPREHENSIVE STUDIO. 7 credit hours/15 contact hours. Prerequisite: major in Architecture, ARC 201. Similar to ARC 201 with inclusion of structural/geophysical studies, as well as continued development of the student's ability to collect, organize and analyze information, abstract ideas and commencement of synthesis.

*Courses to be selected in accordance with program of studies developed with and approved by the faculty advisor

ARC 301. ARCHITECTURAL STUDIO. 5 credit hours/9 contact hours. Prerequisite: major in Architecture, ARC 202.* Series of studio sections offered with different emphasis and subject concentration in order to provide the student with an opportunity to receive a variety of studio experiences or to pursue an area of study. Student may take one instructor for no more than two of the four studios. Section emphasis to be announced by time of academic registration.

ARC 302. ARCHITECTURAL STUDIO. 5 credit hours/9 contact hours. Prerequisite: major in Architecture, ARC 301.* Similar to ARC 301.

ARC 401. ARCHITECTURAL STUDIO. 5 credit hours/9 contact hours. Prerequisite: major in Architecture, ARC 302.* Similar to ARC 301.

ARC 402. ARCHITECTURAL STUDIO. 5 credit hours/9 contact hours. Prerequisite: major in Architecture, ARC 401.* Similar to ARC 301.

Architectural History Courses

ARC 211. ANCIENT ARCHITECTURE. 3 credit hours/3 contact hours. Study of ancient architecture and communities with emphasis upon the built environment as a cultural, political, religious, economical and visual expression.

ARC 212. MEDIEVAL/RENAISSANCE ARCHITECTURE. 3 credit hours/3 contact hours. Prerequisite: ARC 211. Study of medieval and renaissance, architecture, and communities with emphasis upon the built environment as a cultural, economical, political, religious and visual expression.

ARC 311. EIGHTEENTH-TWENTIETH CENTURY ARCHITECURE. 3 credit hours/3 contact hours. Prerequisite: ARC 212. Study of theoretical, technical and cultural background of architecture and planning from the middle of the 18th century through the mid 20th century. Emphasis upon development of ideas as they relate to architectural theories of the 20th century.

Building Systems Courses

ARC 321. BUILDING SYSTEMS ONE. 3 credit hours/3 contact hours. Prerequisite: MAT 120, PHY 101. Basic quantitative study of structural and material behavior, as well as continued study of qualitative behavior initiated in the Foundation Program studies. Primary emphasis upon static forces.

ARC 322. BUILDING SYSTEMS TWO. 3 credit hours/3 contact hours. Prerequisite: ARC 321. Continuation of ARC 321.

*Some studios will be limited to only third or fourth year students, while others will be open to both.

ARC 421. BUILDING SYSTEMS THREE. 3 credit hours/3 contact hours. Prerequisite: PHY 101. Basic quantitative studies of hvac, electrical, plumbing and lighting systems, as well as continued qualitative studies initiated in the Foundation Program studios and relationship of these systems with structural alternatives. May be taken concurrently with ARC 321.

ARC 422. BUILDING SYSTEMS FOUR. 3 credit hours/3 contact hours. Prerequisite: ARC 421. Continuation of ARC 421.

General Architectural Courses

ARC 350. ARCHITECTURAL ELECTIVE STUDIES. 3 credit hours, contact hours to depend upon the nature of the course. Prerequisite: ARC 202. Series of lecture/seminar/laboratory courses which include concentrated, in-depth study of selected environmental design/planning subjects.

ARC 390. DIRECTED INDEPENDENT STUDY. 1-3 credit hours. Prerequisite: major in Architecture. This course is designed to meet the particular need of allowing students to pursue faculty directed independent study topics not served by other departmental offerings. May be repeated for credit with the approval of the College. May not be taken in conjunction with ARC 501 and ARC 502.

BACHELOR OF ARCHITECTURE PROGRAM

ARC 501. STUDIO. 7 credit hours/15 contact hours. Prerequisite: Admission to the Bachelor of Architecture Program. Each student pursues a year-long program of comprehensive, in-depth study on a subject chosen by the student and approved by the College. Program may consist of one-two semester, two-one semester building design projects. Student is expected to demonstrate ability to work with significant architectural issues, as well as a high degree of competence with analysis and synthesis as related to the built environment.

ARC 502. STUDIO. 7 credit hours/15 contact hours. Prerequisite: ARC 501. Continuation of ARC 501.

ARC 504. BUILDING SYSTEMS. 3 credit hours/3 contact hours. Prerequisite: MAT 120, PHY 101. Integration of structural and environmental control systems in response to static and dynamic geophysical societal and technological determinants.

ARC 505. ARCHITECTURAL PRACTICE. 3 credit hours/3 contact hours. Lecture and discussion, development of contact documents, alternative professional administrative procedures and the methods of synthesizing information from various sources relevant to the practice of architecture. Emphasis will be placed on professional ethics and conduct in all areas of professional practice.

**Some studios will be limited to only third or fourth year students, while others will be open to both.*

ARC 506. ARCHITECTURAL PRACTICE. 3 credit hours/3 contact hours. Management and economics of architecture and the building industry. Discussion of contemporary problems of architectural practice and the building industry. Emphasis on understanding new directions with the profession.

ARC 508. BUILDING SYSTEMS SEMINAR. 3 credit hours/3 contact hours. Prerequisite: MAT 120, PHY 101. Open to Architecture majors only. Advanced problems in Architectural Design and integration of environmental systems.

College of Business Administration

Dean: Professor Palmer

Objectives

The purpose of the educational programs in the College of Business Administration is to provide a broad educational base which will help prepare the student for responsible leadership in business and professional life. The College is committed to the educational development of men and women through study of the concepts and mastery of analytical skills which will prepare students for productive and meaningful careers.

The academic programs, methods of instruction and research efforts in the College are designed to maximize the opportunities for each student to develop his full intellectual potential. The programs reflect the application of evolving concepts and knowledge in accounting, economics, management, the behavioral sciences and the quantitative disciplines. The College of Business Administration, through its programs, attempts to serve effectively the needs of the business and professional community, other units of the University and the local, state and federal governments.

Programs

The College of Business Administration has approximately 1,600 students enrolled in its three academic programs. These are the Bachelor of Arts in Business Administration, the Bachelor of Science in Accounting, which offers full academic preparation for the Certified Public Accountant (CPA) designation, and the Bachelor of Arts in Economics.

The College also offers a Master of Business Administration program at the graduate level. This program is designed for men and women who are fully employed and must undertake graduate study on a part-time basis. *Further information concerning the graduate program may be found in the UNCC Graduate Catalog.*

Programs are designed so transfer students from community colleges and other institutions may enter the program and complete their degree requirements in the last two years of their college work. Students planning to take their first two years in community colleges should inform their adviser or counselor of their intent to apply to UNCC so that their program may be tailored to facilitate transfer.

More than half the students in the College of Business Administration are transfer students, and many students work at part-time jobs

which are closely related to their field of study. Students working more than 20 hours per week should reduce their academic load.

Evening Programs and Summer Sessions

All courses required in the Business Administration and Accounting degree programs are offered in the evening. The Master of Business Administration program is offered entirely in the evening. A full program of summer offerings is also available.

Scholarships

There are a number of scholarships available for both men and women studying in the College of Business Administration. Several of the scholarships are designated to recognize academic excellence in the junior and senior years. *Further information can be obtained from the Financial Aid Office at UNCC.*

Careers

Graduates in the Business Administration program may enter careers in:

Sales and Marketing
Banking and Finance
Transportation
Personnel
Manufacturing
Insurance
Public Administration
Management

Accounting graduates find careers in:
Public Accounting
Internal Auditing
Government Accounting
Controllership
Management

Economic Graduates often enter careers in:
Business Economic Analysis
Teaching
Research
Government

DEPARTMENT OF ACCOUNTING

Chairman: Professor Turner
Associate Professors: Guinn, Godfrey, Hinson, Williamson
Assistant Professors: Barnes, Higgins, Jolly, Malmgren
Lecturers (part-time): Chitty, Dunkle, Greer, Hockfield, Johnson, Wallace

A major in Accounting leading to the B.S. degree consists of 27 semester hours of Accounting courses, 33 semester hours of related work in business administration, economics and mathematics as listed below.

I. Accounting

Principles of Accounting (ACC 201 and 202)	6 hrs.
Managerial Cost Accounting (ACC 371)	3 hrs.
Intermediate Financial Accounting (ACC 374 and 375)	6 hrs.
Specialized Accounting Topics (ACC 471)	3 hrs.
Internal Control and Auditing (ACC 475)	3 hrs.
Federal Taxation (ACC 477 and 478)	6 hrs.

II. Business Administration

Marketing Management (BUS 310)	3 hrs.
Financial Management (BUS 320)	3 hrs.
Business Law I (BUS 350)	3 hrs.
Operations Management (BUS 300)	3 hrs.
Management of Human Resources (BUS 340)	3 hrs.

III. Economics

Principles of Economics (ECO 201 and 202)	6 hrs.

IV. Mathematics

Basic Concepts of Mathematics (MAT 101)	3 hrs.
Calculus (MAT 120)	3 hrs.
Algorithmic Languages (CSC 100)	3 hrs.
Statistics (MAT 122)	3 hrs.

Students who complete a major in Accounting will meet the educational requirements to take the North Carolina Certified Public Accountant Examination.

In addition to the University requirement of a 2.0 minimum quality point average, a student must have at least a 2.0 quality point average in all 300 and 400-level required accounting courses in order to obtain a B.S. Degree in Accounting.

RECOMMENDED CURRICULUM FOR THE B.S. DEGREE IN ACCOUNTING

Freshman Year

English 101	3	English 102	3
Laboratory Science	4	Laboratory Science	4
Mathematics 101	3	Mathematics 120	3
Humanities	3	Humanities	3
Elective (1)	2	Elective (1)	2
	15		15

Sophomore Year

Principles of Economics (ECO 201)	3	Principles of Economics (ECO 202)	3
Algorithmic Languages I (CSC 100)	3	Statistics (MAT 122)	3
Principles of Accounting (ACC 201)	3	Principles of Accounting (ACC 202)	3
Elective (2)	6	Elective (2)	6
	15		15

Junior Year

Intermediate Financial Acct. I (ACC 374)	3	Intermediate Financial Acct. II (ACC 375)	3
Marketing Management (BUS 310)	3	Operations Management (BUS 300)	3
Management of Human Resources (BUS 340)	3	Managerial Cost Acct. (ACC 371)	3
Electives (2)	6	Electives (2)	6
	15		15

Senior Year

Business Law I (BUS 350)	3	Internal Control and Auditing (ACC 475)	3
Income Taxation for Individuals (ACC 477)	3	Advanced Income Taxation (ACC 478)	3
Financial Management (BUS 320)	3	Electives (3)	9
Specialized Acct. Topics (ACC 471)	3		
Elective	3		
	15		15

A minimum of 12 hours of electives must be taken from courses other than those offered in the College of Business Administration. Behavioral sciences and communication courses are recommended for inclusion in the 12 hours of electives.

For those students planning to take the CPA exam, it is recommended that they take the following additional courses in their senior year:

Business Law II (BUS 450)	3 hrs.
Management Science (BUS 431)	3 hrs.
CPA Preparation (ACC 479)	3 hrs.

COURSE DESCRIPTIONS

ACCOUNTING

ACC 201. PRINCIPLES OF ACCOUNTING I. (3) A study of fundamental accounting principles, with emphasis on managerial use of accounting data and analysis of financial statements. Three lecture hours and one laboratory period of two hours a week. The laboratory period is optional unless scheduled for an examination.

ACC 202. PRINCIPLES OF ACCOUNTING II. (3) Prerequisite: ACC 201. A study of basic accounting theory, corporate financing and reporting; financial planning; and an introduction to managerial accounting. Three lecture hours and one laboratory period of two hours a week. The laboratory period is optional unless scheduled for an examination.

ACC 371. MANAGERIAL COST ACCOUNTING. (3) Prerequisite: ACC 202. An analysis of the uses of accounting data in planning, controlling and decision-making processes of business enterprises. Three lecture hours and two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 374. INTERMEDIATE FINANCIAL ACCOUNTING I. (3) Prerequisite: ACC 202. An in-depth analysis of the requirements of outsiders (investors, auditors and governments) for information about the status and operations of firms. The application of various theories and concepts will be stressed. Three lecture hours and two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 375. INTERMEDIATE FINANCIAL ACCOUNTING II. (3) Prerequisite: ACC 374. A continuation of ACC 374 with an emphasis on accounting problems peculiar to corporate organizations and governmental units. Three lecture hours, two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 385. FEDERAL INCOME TAXATION. (3) Prerequisite: ACC 202. Open to non-accounting majors only. A study of federal

income tax laws and regulations applicable to individuals and business organizations. Three lecture hours, two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 471. SPECIALIZED ACCOUNTING TOPICS. (3) Prerequisite: ACC 375. Specialized accounting topics with emphasis on consolidated statements. Three lecture hours, two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 475. INTERNAL CONTROL AND AUDITING. (3) Prerequisite: ACC 375. An analysis of the accounting control systems and the independent auditor's examination of the system and other evidence as a basis for expressing an opinion on financial statements. Three lecture hours, two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 477. INCOME TAXATION FOR INDIVIDUALS. (3) Prerequisite: ACC 202. A study of federal income tax laws and regulations applying to individuals. Three lecture hours, two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 478. ADVANCED INCOME TAXATION. (3) Prerequisite: ACC 477. A study of federal income tax laws and regulations applying to partnerships, corporations, estates and trusts, and estate, gift and inheritance taxes. Three lecture hours, two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 479. CPA PREPARATION. (3) Prerequisite: ACC 471. Intensive study of principles and techniques involved in the solution of advanced accounting problems encountered in public accounting practice. Three lecture hours, two laboratory hours per week. The laboratory period is optional unless scheduled for an examination.

ACC 490. CURRENT DEVELOPMENTS IN ACCOUNTING. (1) (2) or (3) May be repeated for credit. Prerequisite: consent of the department. A research project will be required. Topics will be selected from internal and external auditing, governmental accounting, income taxes, managerial accounting and accounting theory.

DEPARTMENT OF BUSINESS ADMINISTRATION

Chairman: Edward L. Walls, Rush S. Dickson Professor of Finance
Professors: Conrad, Palmer
Associate Professors: Geurin, Sage, Trosch, Williams
Assistant Professors: Barnes, Kennedy, Nilsson, Stevenson, Timm
Lecturers: Bowers, DeVore, Poteat, Prewitt

The goals of the undergraduate program in business are to provide graduates with:

1. Specialized knowledge and skills enabling them to perform with competence upon graduation and progress rapidly in their profession.

2. Broad knowledge of business organization and processes enabling them to see individual functions from the perspective of the organization and to facilitate constructive change.

3. The qualities traditionally attributed to a liberal arts education at the university level; including a disciplined and inquiring mind, and understanding of one's culture and self.

To this end the Department offers a curriculum leading to the Bachelor of Arts Degree in Business Administration composed of the following major components:

1. *Prerequisites:* Courses necessary as preparation for business courses. To be completed before enrolling in business courses: (MAT 101, 120, 122; ECO 201, 202; ACC 201, 202).

2. *The Business Core:* Business, Accounting and Economics courses designed to provide essential understanding of business processes and organization.

3. *Business Electives:* Courses designed to provide depth in specialized areas.

4. *Other Electives:* Throughout the undergraduate curriculum, a student can, and is encouraged to, elect courses outside the business area in following a personal interest or course of study which will add breadth and depth of understanding and complement the business degree. *General Electives* offered by the Department can also be applied to degree requirements.

To complete a program a candidate must complete the following courses:

1. **PREREQUISITES**—*TO BE COMPLETED PRIOR* to enrollment in Business department courses.

   a. *Mathematics*
   Basic Concepts of Mathematics (MAT 101) ..... 3 hrs.
   Calculus (MAT 120) ..... 3 hrs.
   Statistics (MAT 122) ..... 3 hrs.

b. *Economics*
Principles of Economics (ECO 201 and 202) .... 6 hrs.**

c. *Accounting*
Principles of Accounting (ACC 201 and 202) .... 6 hrs.**

2. **THE BUSINESS CORE**—To be substantially completed before enrolling in *Business Elective* courses.

a. *Specialized and Staff Areas:* To be substantially completed before enrolling in *Functional Area* courses.

Economics 325 (ECO 325)	3 hrs.
Accounting 371 (ACC 371)	3 hrs.
Business Communications (BUS 360)	3 hrs.
Management of Human Resources (BUS 340)	3 hrs.
Business Law I (BUS 350)	3 hrs.

b. *Functional Areas:* To be completed before enrolling in *Business Policy.*

Operations Management (BUS 300)	3 hrs.
Marketing Management (BUS 310)	3 hrs.
Financial Management (BUS 320)	3 hrs.

c. *Capstone Course:* Integrates all other courses from viewpoint of chief executive officer.

Business Policy (BUS 460)	3 hrs.

3. **BUSINESS ELECTIVES:**

As elected by student to achieve professional competence in selected areas	9 hrs.
TOTAL HOURS REQUIRED	57 hrs.

4. **OTHER ELECTIVES:** 120 credit hours are required for graduation, and the student has 60 hours available as electives. These can be used as the student and his adviser deem advisable in designing a curriculum to meet student objectives. Possibilities include a concentration in areas such as the physical and social sciences, or other professional schools. In this way, the student can pursue non-business subjects in depth either to satisfy personal interest or augment the business degree for professional purposes.

In computing the quality point average in the major, all required courses are included.

TYPICAL PROGRAMS FOR BUSINESS ADMINISTRATION

Most students enter the business program either as freshmen or as juniors transferring from another institution. Many work while

**ECO 325 and ACC 371 also required as part of Business Core.

attending school, others do not. A significant number wish to complete the degree as quickly as possible while the circumstances of others dictate or permit a less intensive schedule.

The needs of transfer students are quite varied because of transferred credits, lack of prerequisites, and other factors. It is therefore difficult to describe typical transfer student programs.

The needs of entering freshmen are more predictable, however, and the following programs illustrate how an entering freshman might plan to complete the curriculum in either four years or three years.

FOUR-YEAR PROGRAM

Freshman Year

Fall		*Spring*	
*English 101	3	*English 102	3
*Mathematics 101	3	*Mathematics 120	3
*Lab Science	4	*Lab Science	4
*Humanities	3	*Humanities	3
Elective	3	Elective	3
	16		16

Sophomore Year

*Economics 201[1]	3	*Economics 202[1]	3
Accounting 201[1]	3	Accounting 202[1]	3
Electives	9	Mathematics 122[1]	3
		Electives	6
	15		15

Junior Year

Economics 325	3	Business 340	3
Acccounting 371	3	Business 300	3
Business 350	3	Business 310	3
Business 360	3	Business 320	3
Elective	3	Elective	3
	15		15

Senior Year

Business Electives[2]	6	Business 460[2]	3
Electives	9	Business Electives[2]	3
		Electives	9
	15		15

*General Degree Requirement

[1]Prerequisites for upper division required business courses.

[2]These courses may be taken in business, accounting and/or economics at the 300 or 400 level with department approval. To be taken after all 300-level required business core courses have been fulfilled.

NOTE: It should be noted that a student needs only 120 hours for a B.A. Degree in Business Administration.

THREE-YEAR PROGRAM

By careful planning, utilizing the summer session offerings, it is possible for those interested in an accelerated program to complete all requirements for the Bachelor of Arts in Business Administration in three years.

POSSIBLE ACCELERATED PROGRAM FOR BUSINESS ADMINISTRATION

Freshman Year

Fall		*Spring*	
*English 101	3	*English 102	3
*Mathematics 101	3	*Mathematics 120	3
*Lab Science	4	*Lab Science	4
*Humanities	3	*Humanities	3
Elective	3	Elective	3
	16		16

1st Summer Session		*2nd Summer Session*	
*Economics 201[1]	3	*Economics 202[1]	3
Accounting 201[1]	3	Accounting 202[1]	3
	6		6

Sophomore Year

Fall		*Spring*	
Mathematics 122[1]	3	Economics 325	3
Business 350	3	Accounting 371	3
Business 360	3	Business 340	3
Electives	6	Electives	6
	15		15

1st Summer Session		*2nd Summer Session*	
Business 310	3	Business 300	3
Business 320	3	Elective	3
	6		6

Junior Year

Fall		*Spring*	
Business Electives[2]	6	Business 460[2]	3
Electives	12	Business Electives[2]	3
		Electives	10
	18		16

*General Degree Requirement

[1]Prerequisites for upper division required business courses.

[2]These courses may be taken in business, accounting and/or economics at the 300 or 400 level with department approval. To be taken after all 300 level required business core courses have been fulfilled

NOTE: It should be noted that a student needs only 120 hours for a B.A. Degree in Business Administration.

CORE COURSES

BUS 300. OPERATIONS MANAGEMENT. (3) This course will provide an introduction and development of the management functions in manufacturing and non-manufacturing organizations. It will take a systems approach in providing an insight into the organizational environment, the basic operating functions, the problems and decisions a manager encounters and the solution techniques and models with which he deals. Computer application will be included where appropriate.

BUS 310. MARKETING MANAGEMENT. (3) The objective of this course is to acquaint the student with the marketing concept and the various aspects of marketing and its interface with the external environment and other functional areas of the organization. It is aimed at developing breadth in the subject and providing a foundation for further study in marketing. At the same time, it will have wide enough coverage to stand alone for those who do not wish to concentrate in marketing.

BUS 320. FINANCIAL MANAGEMENT. (3) Prerequisite: ACC 371. Principles and problems of financial aspects of managing an individual company. Particular emphasis on financial analysis for use in managing capital structure, least-cost asset management, planning and control. Computer application will be included where appropriate.

BUS 340. MANAGEMENT OF HUMAN RESOURCES. (3) A managerial perspective of the influence of leadership, motivation, group dynamics, structure, communications, conflict and change on effective utilization and development of human resources. Emphasis is on applications in business, but the approach is also appropriate for management of hospitals, schools and other nonprofit organizations.

BUS 350. BUSINESS LAW I. (3) A study of the legal setting of business and its relationship to one's personal affairs. Topics covered include: the nature of law and the court system, torts, contracts, commercial paper, consumer credit, sales, partnerships, corporations, the employer-employee relationship, real and personal property.

BUS 360. BUSINESS COMMUNICATIONS. (3) The nature and problems of individual, interpersonal, and organizational communication in business. Various verbal techniques such as presentations, graphics, public speaking and writing will be developed and practiced for effective organizational and individual performance.

BUS 460. BUSINESS POLICY. (3) Prerequisites: All other required business core courses. Concerns the role of top management of the firm in integrating internal functions and environmental forces. Emphasis on defining economic, ethical, political and social factors

affecting the firm and their consideration in setting goals and operating policies.

BUSINESS ELECTIVES

1. *Functional and Staff areas*

BUS 401. ADVANCED OPERATIONS MANAGEMENT. (3) Prerequisite: BUS 300. This course through cases and/or management simulations will enable the student to apply the knowledge he attained in Operations Management. The student, through an application forum, should develop in greater depth his understanding of the operating functions of an organization.

BUS 410. MARKETING RESEARCH AND ANALYSIS. (3) Prerequisite: BUS 310. The research course will provide the student with an understanding of marketing research and its usefulness in the organization. The course will deal with scientific marketing research methods with emphasis on collection, analysis and interpretation of data as applied to the solution of marketing problems.

BUS 411. PROMOTION. (3) Prerequisite: BUS 310. This course will cover all areas of marketing promotion, including such topics as advertising, media selection, selling, packaging and forms of sales promotion. This course will offer basic skills and techniques to allow the student to enter careers in advertising, sales or media.

BUS 420. FINANCIAL ANALYSIS. (3) Prerequisite: BUS 320. Application of appropriate theory and techniques to financial analysis for internal and external uses. Material taught in previous courses is integrated in analysis of individual firms for purposes such as determining debt capacity and stock valuation. Focus will vary from that of internal management to creditors and security analysts.

BUS 421. FINANCIAL INSTITUTIONS AND MARKETS. (3) Prerequisite: BUS 320. A study of financial institutions and money and capital markets which considers their roles in the intermediation process. Special emphasis is focused on the comparative financial policies of financial institutions considered in the context of their market environments.

BUS 430. ADVANCED BUSINESS ANALYSIS. (3) Prerequisite: BUS 300. A study of more advanced probabilistic business problems with extensive use of canned computer programs and preparing system models. The course will center on the application of decision theory to business problems.

BUS 431. MANAGEMENT SCIENCE. (3) Prerequisite: BUS 300. An analytical approach toward understanding the management process and solving management problems. Emphasis will be placed on exploring existing models, but the student should develop an insight for problem development and model building.

BUS 440. LEADERSHIP, PERFORMANCE, EFFECTIVENESS AND CHANGE. (3) Prerequisite: BUS 340. The nature and major dimensions of supervising in work organizations (business, government, hospitals, educational, etc.) in a changing environment. Emphasis on leadership theories and role functions in order to identify, measure and predict managerial effectiveness. The role of a leader as a change agent is particularly stressed. Methods and techniques of management and organizational development will be reviewed and utilized for leader development for optimum benefit to the firm and the individual leader. Case analysis and role play exercise used to stimulate actual problems.

BUS 441. PERSONNEL ADMINISTRATION. (3) Prerequisite: BUS 340. The study of effectively selecting, utilizing, assessing and developing human managers as well as the role of the personnel department in administering human resources in a changing and demanding environment. Experience in developing and utilizing behavioral science research methods to assess effectiveness.

BUS 450. BUSINESS LAW II. (3) Prerequisite: BUS 350. The study of the Uniform Commercial Code. Subjects covered include sale of goods, commercial paper, bank deposits and collections, letters of credit, bulk transfers, documents of title, investment securities and secured transactions.

BUS 465. MANAGEMENT INFORMATION SYSTEMS. (3) Prerequisite: consent of the instructor. The principles of the structure and the analysis of the information flows within an organization are studied. The concept of a unified MIS system is stressed using both internal and external data sources.

2. *Other areas*

BUS 373. SMALL BUSINESS MANAGEMENT. (3) Consideration of opportunities and obstacles of starting and operating a small business. Emphasis will be on intergrating all managerial requirements (financial, marketing, operation, legal, logistics, accounting and behavioral) of owning and operating a small business. Study of opportunities and assistance provided by franchises, federal, state and local agencies. Practice in solving small business problems will be gained through case analysis.

BUS 374. INTERNATIONAL BUSINESS PROCESSES AND PROBLEMS. (3) An introduction to the process, institutions and problems associated with exporting, importing and management of multinational businesses.

BUS 390. TOPICS IN BUSINESS. (3) Prerequisite: consent of the instructor. Topics from the area of Management and Administration. The course may be repeated for credit.

BUS 490. DIRECTED STUDY. (3 to 6 hrs. credit) Prerequisite: consent of the instructor. Enrollment granted only by permission of the faculty with whom the work will be performed. The student's

work assignments will be designed by the student and faculty member who will oversee the project or study. The credit hours will be determined prior to enrollment and will be based on the particular project undertaken.

GENERAL ELECTIVES

BUS 370. PERSONAL FINANCE. (3) (No Prerequisite) A course in the management of personal and family financial affairs. Topics include family financial planning and budgeting, saving for financial emergencies, consumer purchases and the use of credit, security and real estate investments, protection against premature death or disability, providing retirement income, insurance needs, income and estate tax planning.

BUS 371. PRINCIPLES OF INSURANCE. (3) (No Prerequisites) A study of the different types of nonspeculative risks faced by individuals and businesses and the possible alternative methods of treating such risks. An examination of the specific application of these methods in regard to life, health, property, casualty and liability insurance contracts.

BUS 372. REAL ESTATE. (3) (No Prerequisites) A survey of problems involved in the acquisition, management and transfer of real estate. Topics include: Real estate contracts and leases; deeds, mortgages and other liens; real estate brokerage; appraisals and financing; taxation; and governmental regulations.

DEPARTMENT OF ECONOMICS

Chairman: Associate Professor Davis
Professor: Wubben
Associate Professors: Rogers, Jorgensen, Liner
Assistant Professor: Madsen
Lecturers: Ramsey, Martin, Renfro, Weiss, Wellman
Lecturers (part-time): Snider, Snyder, Allsbrook

The Department of Economics offers two courses of study leading to a B.A. Degree. Students may select a major in economics with either a business administration emphasis or a social science emphasis.

Business Administration Emphasis

A major in economics, with a business administration emphasis, leading to the B.A. degree consists of 54 hours specified as follows:

I. Mathematics
- Basic Concepts of Mathematics (MAT 101)* 3
- Calculus (MAT 120)* 3
- Introduction to Computers (CSC 101) 3

II. Economics:
- Principles of Economics (ECO 201 and 202)** 6
- Economics of the Firm (ECO 325) *OR*
  - Microeconomic Analysis (ECO 322) 3
- Money and Banking (ECO 315) *OR*
  - Macroeconomic Analysis (ECO 323) 3
- Econometrics (ECO 312) 3
- Industrial Organization & Public Policy (ECO 480) 3

III. Business Administration and Accounting:
- Principles of Accounting (ACC 201 and 202) 6
- Financial Management (BUS 320) 3
- Two of the Following
  - Marketing Management (BUS 310)
  - Business Law I (BUS 350)
  - Operations Management (BUS 300)
  - Management of Human Resources (BUS 340) 6

IV. Economics Electives:
- To be selected by the student from the 300 and 400-level offerings of the Department of Economics 12

Social Science Emphasis

A major in economics, with a social science emphasis, leading to the B.A. degree consists of 54 hours specified as follows:

*Will satisfy general University requirement for mathematics or foreign language.
**Will satisfy the general University requirement for social science.

I. Mathematics

Basic Concepts of Mathematics (MAT 101)*	3
Calculus (MAT 120)*	3
Introduction to Computers (CSC 101)	3

II. Economics

Principles of Economics (ECO 201 and 202)**	6
Microeconomic Analysis (ECO 322)	3
Macroeconomic Analysis (ECO 323)	3
Econometrics (ECO 312)	3
Evolution of Economic Thought (ECO 477)	3

III. Social Science Electives

Course work to be selected from at least three of the following disciplines: geography, history, political science, psychology, sociology 15

IV. Economics Electives

To be selected by the student from the 300 and 400-level offerings of the Department of Economics 12

In computing the quality point average in the major, all required courses except Mathematics 101 and Mathematics 120 are included.

It is recommended that students who plan to take graduate work in economics take additional work in mathematics and consult with their advisers concerning this recommendation.

B.A. IN ECONOMICS WITH BUSINESS ADMINISTRATION EMPHASIS

Freshman Year

English 101	3	English 102	3
Mathematics 101	3	Mathematics 120	3
Laboratory Science	4	Laboratory Science	4
Humanities	3	Humanities	3
General University Elective	2	General University Elective	2
	15		15

Sophomore Year

Principles of Economics (ECO 201)	3	Principles of Economics (ECO 202)	3
Introduction to Computers (CSC 101)	3	Principles of Accounting (ACC 202)	3
Principles of Accounting (ACC 201)	3	General University Electives	9
General University Electives	6		
	15		15

Junior Year

Economics of the Firm (ECO 325)	3	Money and Banking (ECO 315)	3
Econometrics (ECO 312)	3	Economics Elective	3
Financial Management (BUS 320)	3	Business Elective	3
General University Electives	6	General University Electives	6
	15		15

Senior Year

Industrial Organization & Public Policy (ECO 480)	3	Economics Electives	6
Economics Elective	3	General University Electives	9
Business Elective	3		
General University Electives	6		
	15		15

*Will satisfy general University requirement for mathematics or foreign language.
**Will satisfy the general University requirement for social science.

B.A. IN ECONOMICS WITH SOCIAL SCIENCE EMPHASIS

Freshman Year

English 101	3	English 102	3
Mathematics 101	3	Mathematics 120	3
Laboratory Science	4	Laboratory Science	4
Humanities	3	Humanities	3
General University Elective	2	General University Elective	2
	15		15

Sophomore Year

Principles of Economics (ECO 201)	3	Principles of Economics (ECO 202)	3
Introduction to Computers (CSC 101)	3	Social Science Elective	3
Social Science Elective	3	General University Electives	9
General University Electives	6		
	15		15

Junior Year

Microeconomic Analysis (ECO 322)	3	Macroeconomic Analysis (ECO 323)	3
Econometrics (ECO 312)	3	Economics Elective	3
Social Science Elective	3	Social Science Elective	3
General University Electives	6	General University Electives	6
	15		15

Senior Year

Economics Elective	3	Evolution of Economic Thought (ECO 477)	3
Social Science Elective	3	Economics Electives	6
General University Electives	9	General University Electives	6
	15		15

COURSE DESCRIPTIONS

ECONOMICS

ECO 201. PRINCIPLES OF ECONOMICS-MACRO. (3) Topics considered include the scope and methodology of economics as a social science, the measurement of national income, the theory of national income determination, money and banking and monetary and fiscal policy.

ECO 202. PRINCIPLES OF ECONOMICS-MICRO. (3) Topics considered include the operation of the pricing mechanism of a market economy, the industrial organization of our contemporary capitalistic economy, problems of economic concentration and of agriculture, the theory of income distribution, international economic relationships and comparative economic systems.

ECO 302. CONSUMER ECONOMICS. (3) (Designed for Non-Majors) Survey of economic analysis applied to a variety of consumer problems. Topics include Determination of Family Income, Consumer Demand and Expenditures, Economics of Family Planning, Investment in Consumer Durables, Taxation and Government in Protection and Regulation.

ECO 303. ECONOMIC CONCEPTS. (3) Topics considered include both microeconomic and macroeconomic concepts. The scope and method of economics, the pricing mechanism of markets, the industrial organization of the capitalistic system, the measurement of national income, the theory of national income determination, money and banking and monetary and fiscal policy. Credit will not be given for ECO 303 where credit has been given for ECO 201 or ECO 202.

ECO 305. INDUSTRIAL RELATIONS. (3) Prerequisite: ECO 202. Systematic analysis of the sociological, economic and political forces affecting and affected by the work environment. Special emphasis on market structure, the small group, the legal environment and union structure.

ECO 306. LABOR ECONOMICS. (3) Prerequisite: ECO 201 and 202. The economic implications of basic phenomena in the field of labor, including wage and employment theory, collective bargaining, unemployment and social insurance. Historical and legal forces affecting the work environment are covered.

ECO 312. ECONOMETRICS. (3) Prerequisites: MAT 120 and CSC 100 or 101. An exposition of relevant economics parameters utilizing regression analysis and in-depth studies of relationships between explained and explanatory variables. Topics include simple and multiple regression and correlation, matrix algebra and tests of significance, all as related to the modern theory of econometrics. Frequent use of "packaged" computer programs will be made throughout the course.

ECO 314. RESEARCH METHODS. (3) Prerequisite: MAT 101 and 120, ECO 201 and 202. This course is an introduction to research in economics. It acquaints students with the major sources of data and information necessary to conduct research. Emphasis is placed on the application of elementary research methods to economic problems.

ECO 315. MONEY AND BANKING. (3) Prerequisite: ECO 201. The characteristics and functions of money in the modern economy. The operation of the U.S. banking system; monetary theory and policy.

ECO 317. BUSINESS AND ECONOMIC FORECASTING. (3) Prerequisite: ECO 201. The course analyzes fluctuations in economic activity, including production, employment, prices and industry sales. Topics considered include forecasting methods, business cycle theories, historical record, industry and sales forecasting.

ECO 322. MICROECONOMIC ANALYSIS. (3) Prerequisites: ECO 201 and 202. This course deals with various aspects of microeconomic analysis with its primary emphasis on the theory of utility and production functions. A detailed discussion of resource allocation is undertaken for the determination of optimum output and pricing by a firm operating under various market situations such as pure competition, monopoly, oligopoly and imperfect competition. Emphasis is placed on distribution and welfare theories.

ECO 323. MACROECONOMIC ANALYSIS. (3) Prerequisites: ECO 201 and 202. Pre-or-Corequisite: ECO 312. An analysis of economic aggregates, primarily of income determination. Special emphasis on the development of macroeconomic models and forecasting.

ECO 325. ECONOMICS OF THE FIRM. (3) Prerequisite: ECO 202. A consideration of economic analysis of particular importance to business firms with emphasis on decision-making. Topics covered include demand theory and forecasting; cost theory and analysis; price policies.

ECO 370. MONETARY AND FISCAL POLICY. (3) Prerequisite: ECO 201. An examination of the nature and content of economic behavior of the American economy. This course deals primarily with a critical examination of monetary and fiscal tools and their application with a view toward full employment, economic growth and price stability.

ECO 375. COMPARATIVE ECONOMIC SYSTEMS. (3) Prerequisite: ECO 202. An institutional and theoretical approach to competitive economics. Includes an analysis of the Marxian theoretical system as well as a comparison of capitalism, socialism and communism.

ECO 390. TOPICS IN ECONOMICS. (3) May be repeated for credit. Prerequisite: consent of the department. Topics from the areas of economic theory, economic development, consumer economics, welfare economics and current economic problems.

ECO 395. DIRECTED INDIVIDUAL STUDY. (Variable credit 1-3 hours. May be repeated for credit.) Prerequisites: junior standing and permission of the instructor and the department. This course involves the independent study of a theoretical and/or policy problem in a special area of economics. The student can pursue a particular problem to a depth much greater than can be undertaken within the scope of existing courses. The topics of the investigation may originate from the student or from the faculty member who will supervise the study.

ECO 412. ECONOMETRICS II. (3) Prerequisite: ECO 312. Tools of analysis developed in this course are more extensive and of a greater depth than those studied in ECO 312 and they allow problems of greater complexity to be studied. Regression and correlation techniques are applied to economic and business problems derived from government and business environments.

ECO 416. PUBLIC FINANCE. (3) Prerequisite: Economics 370. The revenue and expenditure problems of governmental units. Intergovernmental financial relationships and the impact of federal fiscal policy upon the American economy.

ECO 435. ECONOMICS OF DEVELOPMENT. (3) Prerequisites: ECO 201 and 202. Different theories of economic growth and development are examined with a view to their application to varying economic and social systems. Current theoretical models are studied in order to determine their relevance to efficient allocation of resources to both the developed and the developing nations.

ECO 449. WORK-STUDY PROGRAM IN ECONOMICS. (3 to 6 hrs. credit, by determination of faculty committee.) Prerequisites: ECO 201, 202 and 312. Enrollment granted only by permission of a faculty committee from the College of Business Administration. Prior to enrollment, plans for the student's work assignment in this course must be completed. Assignments in government utilities, banking and other paid employment must utilize the techniques and principles learned in core requirements in economics. Work assignments require enough faculty contact with the student and employer to insure satisfactory performance by the student. Such assignments must be a minimum of three months full-time, six months half-time and other proportional periods of time.

ECO 471. INTERNATIONAL ECONOMICS. (3) Prerequisites: ECO 201 and 202. A survey of trade theories from classical mercantilism to the contemporary version. A detailed discussion of balance of payments, foreign exchange rate, capital movements and monetary reform proposals is undertaken. Special attention is given to an evaluation of international financial organization and regional groupings.

ECO 477. EVOLUTION OF ECONOMIC THOUGHT. (3) Prerequisite: ECO 202. The development of the great economic ideas of value, distribution, employment, with special emphasis on the foundations of classical economic thought.

ECO 480. INDUSTRIAL ORGANIZATION AND PUBLIC POLICY. (3) Prerequisite: ECO 202. An examination of the characteristics of various types of industries—competitive, oligopolistic, monopolistic and monopolistically competitive—and of the questions of public policy in dealing with problems created by industrial concentration.

College of Engineering

Dean: Professor Snyder
Assistant to the Dean: Associate Professor Evett

The College of Engineering offers two baccalaureate degree programs: the Bachelor of Science in Engineering (BSE) and the Bachelor of Engineering Technology (BET).

The Engineering Technology program is designed to provide an opportunity for graduates of two-year associate degree engineering technology programs to continue their education at the baccalaureate level. Details regarding this program are found under the Department of Engineering Technology section of this *Catalog.*

Bachelor of Science in Engineering

The Bachelor of Science in Engineering curriculum offers professional engineering education which can be used as the foundation for several different career objectives:

1) Some students will wish to prepare for a career as professional engineers in industry, in business or in consulting.

2) Some will look toward graduate study in order to prepare for careers in research, development or teaching.

3) Still others will desire a more general and more liberal engineering education with the objective of keeping a variety of career avenues open.

Whatever the career objective of the student, a sound engineering educational program must include substantial content in: (1) the humanities and social sciences, (2) the physical sciences, (3) mathematics, (4) and the engineering sciences. Also, (5) there must be an in-depth experience in creative engineering design. The student expecting to accept employment in industry will probably wish to emphasize the engineering design and engineering science aspects of his or her program, while the student preparing for graduate study might emphasize the mathematics and science aspects. A high percentage of engineering graduates ultimately take on executive and management responsibilities in industries and firms which are based upon engineered products and engineering services. Accordingly, some students will want to construct an elective option in their program which includes business administration and economics offerings, and other courses which will strengthen their communication skills.

There are many students who have not settled upon career objectives by the time they enter college, and some who may not develop specific objectives until later in their four-year program of

study. These persons, if they have aptitude and interest in both technical and non-technical areas of knowledge, have the opportunity to synthesize for themselves, with counsel and guidance, a program of study combining engineering and the humanities and social sciences. The combination of liberal and engineering education can offer the student an excellent opportunity to find meaning and self-fulfillment in a technological age, whatever career he or she may ultimately pursue.

The engineering curricula prescribed by the faculty of the University of North Carolina at Charlotte give thorough attention to the five essential components of a sound program of study. Those elements which are considered basic to every program of study are specified in the curriculum outline and result in freshman and sophomore requirements which are essentially the same for all engineering students, except for the electives in the humanities and social sciences. This common basic core serves not only as the educational foundation for the professional engineering courses later in the program, but also provides solid preparation for the first phase of the Professional Engineering Registration Examinations (EIT Exam).

A high degree of program flexibility is achieved through the use of *Minor Option* electives which provide the student with an opportunity to develop an individualized program within one of the professional engineering departments, i.e., the *Major Options:* Engineering Analysis and Design; Engineering Science, Mechanics and Materials; and Urban and Environmental Engineering. By the careful selection of elective courses the student may achieve a specialization in one of the more traditional fields of engineering (electrical, mechanical, civil, chemical) or an undergraduate foundation for some newly emerging fields (biomedical electronics, urban engineering).

Requirements for the
Bachelor of Science in Engineering Degree

English 101	3
Humanities and Social Studies Electives	15
Economics 201 or 202	3
Mathematics 105, 141, 142, 241, 271	15
Physics 101, 102, 222	11
Chemistry 101, 101L	4
Science Elective	3
EGR 101 A, B, C; 102 A, B, C	6
ESM 241, 242, 311	9
Departmental Requirements*	42
Minor Option**	15
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*See the departmental section of the catalog for these specific requirements.
**See departmental publications for suggested minor-option outlines.

The junior-senior level professional core of the program is composed of the departmental major requirement and a group of Minor Option electives. The Minor Option is to be a coherent collection of courses designed to meet the specific professional goal of the individual student. This elective package may be used in several ways: (1) to strengthen the major field of specialization; (2) to obtain significant depth within a particular area of specialization in the major field; (3) to build some strength in another engineering or technical field; (4) to strengthen the mathematics, science and engineering base preparatory to graduate study; (5) to support an interdisciplinary study program, e.g., computer science and engineering, biology and physiology related to biomedical engineering; or (6) to develop a second area of interest, e.g., business administration, foreign languages, humanities, social and behavioral sciences.

In the professional programs the Minor Option must contain at least six hours of course work dealing with engineering science, analysis, synthesis or design with the remaining nine hours being in engineering, science, mathematics, business or architecture.

The Humanities and Social Science Electives: The student selects courses approved by the student's department so as to attain a broad background in the humanities and social science areas as well as some depth in at least one such area.

Before undertaking any of the elective courses, the student will work out with his or her adviser a detailed study plan indicating the objectives of the educational program and how the choice of these electives meets these objectives. The requirement of pre-planning the technical and non-technical electives program is intended to assure maximum utilization of curriculum flexibility by actively involving the student in a personalized program of study which will be sound in the professional sense, will recognize and take advantage of the student's best motivations and highest capabilities, and will result in a broad and deep educational preparation for service to and fulfillment in the current technological society.

ACADEMIC REGULATIONS FOR COLLEGE OF ENGINEERING MAJORS

Grade of W

A grade of *W* will be given only on or before 10 calendar days after the date on which preliminary unsatisfactory grade reports are due or if the student withdraws completely from the University.

Adding or Dropping a Course

No Engineering student will be permitted to drop a course after the time period specified under "Grade of *W*" above.

Admission of Former Students into Engineering

A student must apply for readmission if he or she did not complete nor enroll in the previous semester. Official withdrawal from either summer term likewise necessitates an application for readmission.

A student who has officially withdrawn from UNCC with a quality point average of 2.00 or higher is eligible for readmission with consideration given to his or her financial obligation to the University.

A former engineering student who has officially withdrawn from UNCC while on probation is eligible for readmission subject to the approval of the department into which he or she seeks readmission. The student's records will be reviewed, giving consideration to both academic records and financial obligations to UNCC.

Although a student who has been suspended by reason of failure to satisfy the requirements for continued enrollment as stated above may apply for readmission at the expiration of the next semester following suspension, he or she may instead elect to use the "two-year rule."

Two Year Rule

Any engineering student who has been suspended for academic reasons from UNCC is eligible for *one* readmission to engineering after a minimum period of two years from the last semester of enrollment at UNCC. At the time of readmission, the student must elect one of the following options:

1. All courses previously attempted at UNCC are used for the determination of his or her quality point average. However, for the calculation of the student's quality point average at the time of readmission, any course which has been repeated because of an initial *D* or *F* grade, the quality points for that course shall be based only on the last grade assigned with the associated "hours attempted" counting only once.

2. Only those courses for which the student has received a grade of *C* or better can be used to satisfy degree requirements. His or her quality point average will be based only on work attempted after readmission. Eligibility for continued enrollment is determined as in the case of transfer students.

To qualify for honors or high honors, a student must complete at least 48 hours in residency in computing the quality point average after readmission to UNCC.

Any student who voluntarily left UNCC and has not attended UNCC for two or more years is eligible for readmission and may exercise either of the preceding options at the time of readmission.

BASIC ENGINEERING

EGR 101 A, B, C. INTRODUCTION TO ENGINEERING PROBLEMS I. (1, 1, 1) An introduction to the concepts, techniques and tools used to solve engineering problems, including computational methods, engineering graphics and introduction to computer usage. NOTE: To satisfy BSE degree requirements, a student completes three courses of one credit-hour each.

EGR 102, A, B, C. INTRODUCTION TO ENGINEERING PROBLEMS II. (1, 1, 1) Prerequisite: EGR 101 or consent of instructor. A continuation of EGR 101. NOTE: To satisfy BSE degree requirements, a student completes three courses of one credit-hour each.

CONTINUING ENGINEERING STUDIES

The College of Engineering sponsors various special educational programs for practicing engineers, technologists, technicians and others in addition to its regular academic degree programs and courses. These include conferences, short courses, seminars and other continuing education programs designed to aid those practicing in the technical professions and occupations to keep abreast of the latest developments in the rapidly expanding technology. The courses listed below are offered regularly on a periodic basis, while many others are offered on demand.

PROFESSIONAL ENGINEERING-BASICS. Forty-five hours of work reviewing mathematics, chemistry, economics and the basic engineering sciences as preparation for the Professional Engineering Basics (EIT or Exam I) Examination.

PROFESSIONAL ENGINEERING-APPLIED. Fifty-four hours of work reviewing applications in chemical, civil, electrical and mechanical engineering and engineering economics as preparation for the Professional Engineering Principles and Practice (PE or Exam II) Examination.

SURVEYING. Eight hours of work reviewing land surveying as preparation for the land surveying examination.

Anyone desiring information on these courses or requesting special offerings may contact the Office of the Dean of Engineering.

LIBERAL ENGINEERING STUDIES

The impact of technology on man's present condition and future prospects has until now received little formal study. The College of Engineering has two objectives in initiating a bridge from the engineering arts to the liberal arts. The first is to respond to a sincere concern on the part of many of those students *not* majoring in engineering. Many of them realize that there are important social and

environmental problems resulting from the radical present and future changes in technology, and it is the aim of these Liberal Engineering Studies to put the problems and their possible technical solutions into perspective.

The following courses are intended for non-engineering students who wish to explore various aspects of the societal-technological interactions. Engineering students may not use these courses to fulfill requirements for any engineering degree.

LE 111. TECHNOLOGICAL BASES OF SOCIETY I. (3) Concepts underlying the systems which relate directly to the life of the individual in relation to the field of engineering. Emphasis on scientific ideas which are relevant to the student—which he or she should understand to participate in the decision of an age of rapidly changing technology. Specific topics include decision making, optimization, modeling and systems. (May be taken with or without LE 151.)

LE 112. TECHNOLOGICAL BASES OF SOCIETY II. (3) Prerequisite: LE 111. A continuation of LE 111. Introduction to technological concepts which are applicable to the solution of problems of a social and economic, as well as a technical nature—problems which are rapidly becoming the frame of reference for contemporary society. Specific topics include patterns of change, feedback, stability and machines and systems. (May be taken with or without LE 152.)

LE 151. TECHNOLOGICAL BASES OF SOCIETY-LABORATORY I. (1) Corequisite: LE 111. A laboratory course designed to illustrate the concepts presented in LE 111. Simulation of real life situations using simple laboratory equipment. Two laboratory hours per week.

LE 152. TECHNOLOGICAL BASES OF SOCIETY-LABORATORY II. (1) Prerequisite: LE 151; corequisite: LE 112. A laboratory course designed to illustrate the concepts presented in LE 112. A continuation of LE 151. Two laboratory hours per week.

LE 311. TECHNOLOGY IN HISTORICAL PERSPECTIVE. (3). Prerequisite: junior standing. Selected historical cases in science, applied science and technology are reviewed to show the impacts that technological advances have had on man's world. Emphasis is placed on the technologies and their effect on man's physical environment rather than on the resulting change in man's viewpoint toward society, economics or politics.

LE 314. PROBLEMS IN ENVIRONMENTAL CONTROL. (3) Prerequisite: junior standing. Study of a range of environmental problems of interest to the class. The tracing of problem cases to their technological origins, the identification of available, feasible, technological origins, the identification of available, feasible, technological solutions to the specific problems treated. On site inspection of industrial sources of pollution will be made in a series of field trips.

LE 316. ENERGY, POWER AND CONSERVATION. (3) Prerequisite: junior standing. A survey of historic, current and future power sources and devices, including waterwheels and windmills, steam engines and turbines, internal combustion and jet engines, fission and fusion reactors and geothermal, tidal and solar power. Fuel resource reserves, costs, benefits and conservation will be studied.

The second objective is to make special provisions for those students majoring in engineering who find that their areas of interest are broader than can be accommodated by the professional engineering option. Under the Minor Option program of the engineering curriculum, these students can elect a planned series of courses totaling at least 15 semester hours in an area of specialized interest other than engineering. The student undertaking this un-accredited liberal option will work with both his or her engineering career counselor and a faculty adviser from the selected area of interest in planning the program.

DEPARTMENT OF ENGINEERING ANALYSIS AND DESIGN

Chairman: Professor Wayne
Distinguished Professor: Barnette
Associate Professors: Allen, Okon, Smith
Assistant Professor: Kakad
Lecturers: Preston, Jenkins (part-time)

A new type of professional, a systems engineer, is needed to assume a unique role in today's complex society. The curriculum of the Engineering Analysis and Design Department is structured to produce a graduate engineer who is just as specialized as the more traditionally trained colleague but with the capability of formulating solutions to problems that cut across the traditional boundaries. The systems-oriented approach enables the engineer to cope with the synthesis and analysis of the performance of mechanical and electrical systems in particular and to extend this methodology to physical systems in general.

An integrated six-semester sequence of courses, emphasizing the systems approach to analysis, forms the core of this curriculum. These courses are designed to take advantage of the similarity of the concepts, analysis techniques and models associated with the various disciplines. Emphasis is placed on the utilization of the computer to assist in the formulation, analysis and design of large systems.

A laboratory sequence of five courses is designed to serve two purposes: (1) to teach the basic techniques of instrumentation and (2) to relate the analytical methods developed in the classroom to the performance of real physical systems.

The curriculum requirements are flexible enough so that the student may synthesize a program of study to achieve his or her particular objectives and his or her desired degree of specialization. This is done through the use of the minor option, with the guidance and approval of the student's career counselor. If further specialization and a high degree of competence in a particular area are desired, the student may be encouraged to seek an advanced degree.

This systems approach to analysis, coupled with a judicious choice of minor option, provides the student with a balanced and well-rounded education in the fundamentals of engineering which permit a graduate to assume an active and creative position in modern society.

For the professional program, the minor option must contain at least six hours of course work dealing with engineering science, analysis, synthesis or design with the remaining nine hours being in engineering, science, mathematics, business or architecture.

The professional option in Engineering Analysis and Design is accredited by the Engineers' Council for Professional Development.

The departmental requirements for a major in Engineering Analysis and Design are:

EAD 252 - Laboratory I	1
EAD 211 - Linear Networks I	3
EAD 212 - Linear Analysis I	3
EAD 311 - Linear and Dynamic Systems I	3
EAD 312 - Linear and Dynamic Systems II	3
EAD 321 - Fundamentals of Mechanical Design	3
EAD 332 - Fundamentals of Electronics and Semi-Conductors	3
EAD 342 - Electromagnetic Devices	3
EAD 351 - Laboratory II	1
EAD 352 - Laboratory III	1
EAD 381 - Computer Utilization in Engineering	3
EAD 411 - Automatic Control Systems I	3
EAD 412 - Automatic Control Systems II EAD 415 - Mechanical Vibrating Systems	3
EAD 451 - Laboratory IV	1
EAD 452 - Projects Laboratory	2
ESM 341 - Mechanical Behavior of Solids	3
ESM 321 - Introduction to Electromagnetic Fields ESM 342 - Fluid Mechanics	3
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CURRICULUM OUTLINE
FOR THE
BACHELOR OF SCIENCE IN ENGINEERING

ENGINEERING ANALYSIS AND DESIGN

Freshman Year

Physics 101	4	Physics 102	4
Engineering 101 A	1	Engineering 102 A	1
Engineering 101 B	1	Engineering 102 B	1
Engineering 101 C	1	Engineering 102 C	1
Mathematics 141	4	Mathematics 105	1
English 101	3	Mathematics 142	4
		Humanities or S.S.	3
	14		15

Sophomore Year

EAD 211	3	EAD 212	3
ESM 241	3	ESM 242	3
Mathematics 241	3	Mathematics 271	3
Chemistry 101	3	Physics 222	3
Chemistry 101L	1	EAD 252	1
Economics 201	3	Humanities or S.S.	3
	16		16

Junior Year

EAD 311	3	EAD 312	3
EAD 351	1	EAD 352	1
EAD 381	3	EAD 332	3
EAD 321	3	EAD 342	3
ESM 321 or ESM 341	3	Minor	3
Humanities or S.S.	3	Humanities or S.S.	3
	16		16

Senior Year

EAD 411	3	EAD 412 or EAD 415	3
EAD 451	1	EAD 452	2
ESM 342	3	ESM 311	3
Minor	3	Minor	3
Minor	3	Minor	3
Science Elective	3	Humanities or S.S.	3
	16		17

ENGINEERING ANALYSIS AND DESIGN

EAD 211. LINEAR NETWORKS I. (3) Prerequisite or corequisite: Mathematics 142. Introduction to Kirchoff's current and voltage equations using oriented linear graph techniques. Formulation of cutset and circuit matrices. Terminal equations of network elements. Formulation of the primary and secondary systems of equations by matrix methods. Network theorems and equivalence. Power and energy functions.

EAD 212. LINEAR ANALYSIS I. (3) Prerequisite: EAD 211. Prerequisite or corequisite: Mathematics 271. A unified study of models and dynamical properties of mechanical, electrical and hydraulic systems. Emphasis is placed on the development and utilization of realistic mathematical models of physical equations with step, pulse and sinusoidal driving functions using Laplace Transforms. The vector transform as an introduction to sinusoidal steady state. Sinusoidal steady state and frequency response of networks.

EAD 252. LABORATORY I. (1) Prerequisite or corequisite: EAD 212. The first in a series of laboratories designed to develop an understanding of the principles and theory of parameter measurement and instrumentation. Instruction in the use of laboratory equipment and the development and application of experimental techniques. Three laboratory hours per week.

EAD 258. BASIC ELECTRICAL ENGINEERING LABORATORY. (1) Corequisite: EAD 268. A laboratory designed to supplement the student's knowledge and enhance his understanding of the principles and operation of electrical circuits, basic electronic devices and energy conversion devices. Not open to Engineering Analysis and Design majors. Three laboratory hours per week.

EAD 268. BASIC ELECTRICAL ENGINEERING. (3) Prerequisites: Physics 102 and Mathematics 142. A study of the fundamental concepts and methods of analysis used in electrical engineering. Topics to include: terminal characteristics of devices, analysis of d.c. and a.c. circuits, elementary operation of electronic devices, and electromechanical energy conversion devices. Not open to Engineering Analysis and Design majors.

EAD 311. LINEAR AND DYNAMIC SYSTEMS I. (3) Prerequisites: EAD 212. A unified study of models and dynamical properties of mechanical, electrical and hydraulic systems. Emphasis is placed on the development and utilization of realistic mathematical models of physical aspects of systems. Equation formulation, operational block diagrams and analog simulation. State variable techniques.

EAD 312. LINEAR AND DYNAMIC SYSTEMS II. (3) Prerequisite: EAD 311. A continuation of EAD 311 emphasizing system response characteristics in both the frequency and time domain. Introduction to system analysis techniques.

EAD 321. FUNDAMENTALS OF MECHANICAL DESIGN. (3) Prerequisite: ESM 242 or consent of the department. A study of the design process with examples drawn from the various engineering disciplines. Application of the basic principles of engineering to real world problems, including systems approach to mechanically oriented problems. Introduction to the concepts related to current engineering design problem areas such as noise, artificial environments and human factors.

EAD 322. MECHANICAL SYSTEMS DESIGN. (3) Prerequisites: ESM 341 or consent of the department. An introduction to the mechanical design and dynamic analysis of machine elements and systems; linkages, bearings, gears, springs and other mechanical components used in machine systems.

EAD 332. FUNDAMENTALS OF ELECTRONICS AND SEMICONDUCTORS. (3) Prerequisite: EAD 212. A study of fundamental concepts of principles embracing both vacuum tube and semiconductor theory. Semiconductor and vacuum tube parameters and characteristics. Small signal analysis and equivalent circuits. Rectifier circuitry, vacuum tube and gas tube power devices; thyratrons, ignitrons, etc. Photoelectric devices. Amplifier and oscillator characteristics and their configurations.

EAD 342. ELECTROMAGNETIC DEVICES. (3) Prerequisite: EAD 212. Magnetic circuits. Transformer principles, equations, circuits. Magnetic amplifiers. Incremental motion transducers. Field of distributed windings. Servo control transformers, selsyns.

EAD 351. LABORATORY II. (1) Prerequisite or corequisite: EAD 311. A study of the various generating, measuring and recording devices and evaluation of their accuracy. A study of the use of instrumentation to monitor operating systems and to determine the characteristics and behavior of physical devices. Three laboratory hours per week.

EAD 352. LABORATORY III. (1) Prerequisite: EAD 351. Prerequisite or corequisite: EAD 312. A continuation of EAD 351, emphasizing the experimental analysis techniques of modeling various systems and devices.

EAD 381. COMPUTER UTILIZATION IN ENGINEERING. (3) Prerequisite: junior standing in engineering or consent of instructor. The application of the digital computer to engineering analysis and design problems. Computer-aided analysis and design.

EAD 382. SWITCHING THEORY AND LOGIC DESIGN I. (3) Prerequisite: junior standing or consent of the instructor. An introduction to switching theory and logic design. Elementary topics in Boolean algebra. Combinational circuits, iterative networks and analysis of sequential circuits. The engineering aspects of logic design are emphasized, culminating in a hardware design problem coordinating the topics covered.

EAD 411. AUTOMATIC CONTROL SYSTEMS I. (3) Prerequisite: EAD 312. A study of transfer functions, block diagrams and signal flow graphs. Feedback control system characteristics. The performance and stability of feedback systems using root locus and frequency response methods. Time domain analysis of control systems. The design and compensation of control systems.

EAD 412. AUTOMATIC CONTROL SYSTEMS II. (3) Prerequisite: EAD 411. A study of state space techniques and useful state space methods. System stability. Controlability and observability of linear systems. The formulation of the state equations for discrete-time systems and the analysis of these systems by matrices. Analysis of nonlinear systems. Optimal control systems studies.

EAD 413. NONLINEAR ANALYSIS. (3) Prerequisite: EAD 312. Solutions of nonlinear problems using numerical methods, graphical methods, phase plane plots, analysis of singular points and analytical techniques. The use of analogs and duals for writing equations. The use of the analog computer and digital computer to solve nonlinear problems.

EAD 414. NETWORK SYNTHESIS. (3) Prerequisite: EAD 312. Positive real functions, their properties and methods of testing. Driving point synthesis of LC, RC and RL networks into Foster and Cauer networks. One terminal pair RLC network synthesis using the Brune and Bott-Duffin methods. Realization of two terminal pair networks by ladders. Cauer networks, lattices and Darlington networks. Approximation method.

EAD 415. MECHANICAL VIBRATING SYSTEMS. (3) Prerequisite: EAD 212. A study of free and forced vibrations of systems with multidegrees of freedom. Transient vibrations, analog simulation, non-linear vibrations and the vibration of continuous systems.

EAD 421. MACHINE ANALYSIS AND DESIGN I. (3) Prerequisite: EAD 322. Senior standing. Technical application of the basic principles of the mechanical science to the analysis of machines and mechanical systems. Methods of design of typical machine elements. Strength and deflection requirements.

EAD 422. MACHINE ANALYSIS AND DESIGN II. (3) Prerequisite: EAD 421. Synthesis of machines and mechanical systems. Analysis, creative design and selection of machines and machine elements.

EAD 431. ELECTRONICS. (3) Prerequisite: EAD 332. A study of electronic and semiconductor devices: transistor and vacuum tube power devices, audio and radio frequency amplifiers, tunnel diode amplifiers, high frequency amplifiers, feedback analysis of vacuum tube and transistor circuits, modulation and demodulation theory and related circuitry. Generalized oscillatory analysis.

EAD 432. COMPUTER ELECTRONICS. (3) Prerequisite: EAD 431. A study of logic and gate circuits, wave-shaping circuits, switching circuits, multivibrators, pulse circuits.

EAD 433. COMMUNICATION THEORY I. (3) Prerequisite: EAD 312. A study of information transmission and modulation systems. Transmission through electrical networks, analysis and comparison of modulation systems; sampling and noise.

EAD 441. ELECTRIC POWER SYSTEM ANALYSIS I. (3) Prerequisite: EAD 312 and ESM 321. A study of polyphase networks, power transmission lines and power network representations. System representations, network equations and solutions. Application of digital computer to power system analysis.

EAD 442. ELECTRIC POWER SYSTEM ANALYSIS II. (3) Prerequisite: EAD 441. A study of symmetrical components and their applications. Symmetrical and unsymmetrical fault and load considerations. Load flow problems and numerical methods. Economic operation and stability studies.

EAD 443. ELECTRIC MACHINERY. (3) Prerequisite: EAD 312. Direct-current machines, induction machine. Machines in control systems. Synchronous machines. Fractional horsepower motors.

EAD 451. LABORATORY IV. (1) Corequisite: EAD 411, and prerequisite: EAD 352. A continuation of EAD 352.

EAD 452. PROJECTS LABORATORY. (2) Corequisite: EAD 412 or EAD 415. A project-oriented laboratory course designed to provide the student an opportunity to apply his undergraduate engineering education to practical real world problems.

EAD 481. SWITCHING THEORY AND LOGIC DESIGN II. (3) Prerequisite: EAD 382. A continuation of EAD 382 including sequential circuit synthesis, state assignments, and flow table reduction. Top-down design with stress on engineering considerations and applications.

EAD 482. DIGITAL SYSTEMS THEORY. (3) Prerequisite: EAD 382. The primary emphasis will be on the engineering aspects of digital systems design. Analysis and design of multiplexers, A/D and D/A converters, data communications, and system interfacing. Interrupt generation and processing.

EAD 483. INTRODUCTION TO ENGINEERING SIMULATION. (3) Prerequisite: EAD 381 or consent of instructor. A wide range of simulation-related topics will be introduced, including the theory of simulation, characteristics of current simulators, and trade-offs in simulation studies. This course will cover both continuous and discrete simulation with the primary course emphasis throughout being placed on the application of simulation techniques to engineering problems. Simulation of actual problems from the students' interest and experience areas will constitute a significant portion of the coursework.

EAD 490. SPECIAL TOPICS IN ENGINEERING ANALYSIS AND DESIGN. (Variable credit 1-4 hours. May be repeated for credit.) Prerequisite: consent of the department. The course will build upon and synthesize the knowledge the students have gained from the engineering science, mathematics and physical sciences stem of the core curriculum. The specific topics covered in each separate offering of the course will serve as the vehicle for teaching engineering analysis, synthesis, and design, while simultaneously affording an opportunity for the students to point themselves toward an area of specialization.

EAD 491. UNDERGRADUATE RESEARCH. (Variable credit 1-4 hours. May be repeated for credit.) Prerequisite: consent of the department. This course involves the independent study of a theoretical and/or experimental problem in a specialized area of engineering analysis and design. The student can pursue some particular area or problem to a depth much greater than can be undertaken within the scope of existing courses.

EAD 492. INDIVIDUALIZED STUDY. (Variable credit 1-3 hours. May be repeated for credit.) Prerequisite: consent of the department. Supervised individual study within an area of a student's particular interest which is beyond the scope of existing courses.

DEPARTMENT OF ENGINEERING SCIENCE, MECHANICS AND MATERIALS

Chairman: Professor Snyder
Professors: Houghton, Mohanty
Associate Professors: Coleman, Crippen, Kim
Lecturers: Reddy, Shelton
Lecturers (part-time): Allison, Beers, Love, Roth

The engineering sciences are identified as those areas of engineering which emphasize the application of the fundamental principles of the physical sciences, primarily chemistry and physics, to engineering problems. Some classical engineering areas recognized to fall within this field include the thermal and energy sciences, engineering mechanics, engineering materials, electric and magnetic fields and physical electronics.

Using the flexibility provided by the BSE Minor Option provisions, and with careful planning with his or her engineering career counselor, a student can develop a variety of educational programs which would provide the background for professional engineering licensing and practice in any of the areas included within the engineering sciences. The student can prepare for graduate study in the general field of engineering science or in one of its specialized areas; e.g., the mechanical, electrical or material sciences. A student can also develop an individualized study program in one of the newly emerging interdisciplinary fields involving the merger of engineering and the various science areas, such as bioengineering or electronic materials.

In addition to providing preparation for engineering practice or graduate work in any of the various fields of engineering science, the breadth of topics included within the engineering science courses provides a unique opportunity for the person interested in an exceptionally broad engineering education.

The professional option in Engineering Science, Mechanics and Materials is accredited by the Engineers' Council for Professional Development.

The departmental requirements for the Bachelor of Science in Engineering Degree with a major in Engineering Science, Mechanics and Materials are as follows:

Mathematics Course, 300 level or above	3
Science Elective	3
EAD 211, 212 - Linear Networks and Analysis	6
ESM 252 - ESM Lab I	1
ESM 321 - EM Fields	3
ESM 341 - Introduction to Solid Mechanics	3
ESM 342 - Introduction to Fluid Mechanics	3
ESM 351 - ESM Lab II	1

ESM 352 - ESM Lab III 1
ESM 361 - Introduction to Engineering Materials 3
*ESM 312 - Thermodynamics II
*ESM 322 - EM Waves 6
*ESM 362 - Mechanical Behavior and Strengthening of Solids
ESM 451 - ESM Projects Lab I 1
ESM 452 - ESM Projects Lab II 2
Two additional 400 level ESM courses 6

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At least two of these 3 courses need to be taken.

CURRICULUM OUTLINE
FOR THE
BACHELOR OF SCIENCE IN ENGINEERING
ENGINEERING SCIENCE, MECHANICS AND MATERIALS

Freshman Year

Physics 101	4	Physics 102	4
Engineering 101 A	1	Engineering 102 A	1
Engineering 101 B	1	Engineering 102 B	1
Engineering 101 C	1	Engineering 102 C	1
Mathematics 141	4	Mathematics 105	1
English 101	3	Mathematics 142	4
		Humanities or S.S.	3
	14		15

Sophomore Year

ESM 241	3	ESM 242	3
EAD 211	3	EAD 212	3
Mathematics 241	3	Mathematics 271	3
Chemistry 101	3	Physics 222	3
Chemistry 101L	1	ESM 252	1
Economics 201 or 202	3	Humanities or S.S.	3
	16		16

Junior Year

ESM 311	3	At least 2 of	6
ESM 321	3	ESM 312	
ESM 341	3	ESM 322	
ESM 351	1	ESM 362	
ESM 361	3	ESM 342	3
Humanities or S.S.	3	ESM 352	1
		Minor (a)	3
		Humanities or S.S.	3
	16		16

Senior Year

ESM 4xx (b)	3	ESM 4xx (b)	3
ESM 451	1	ESM 452	2
Minor (a)	3	Minor (a)	3
Minor (a)	3	Minor (a)	3
Mathematics 3xx (c)	3	Science Elective (d)	3
Science Elective (d)	3	Humanities or S.S.	3
	16		17

(a) Minor Option
The student can use this elective block to (1) obtain some depth within the broad field of engineering science by choosing additional advanced courses from the various engineering sciences: (2) obtain significant depth within a particular area of engineering science through the use of available ESM, science, mathematics and other engineering courses; (3) obtain a minor specialization in some other engineering or technical department; (4) prepare for graduate work in engineering science, one of its specialized fields or some other engineering area.

For the professional program, the minor option must contain at least six hours of course work dealing with engineering science, analysis, synthesis or design with the remaining nine hours being in engineering, science, mathematics, business or architecture.

(b) Senior level ESM courses elected to complement the student's overall educational objectives.

(c) An advanced applied mathematics course approved by the advisor.

(d) Three credit hours of an approved course from the physical, life or earth sciences complementing the student's overall educational plan satisfy the college degree requirement; the additional three credit hours satisfy departmental science elective requirements indicated on the previous page and will normally be chosen from chemistry courses, 200 level or above, or physics beyond 222. If it is consistent with the study plan, a student may be allowed to choose the science elective from an area other than physics or chemistry.

Planning of Technical Electives (a) and (b): This package of twenty-one semester hours is intended to provide an opportunity for the student to focus his or her program toward the career objectives. This package is worked out by the student and adviser as early in the student's program as feasible within the guidelines laid out above.

COURSE DESCRIPTIONS

ENGINEERING SCIENCE, MECHANICS AND MATERIALS

ESM 241. ENGINEERING MECHANICS I. (3) Prerequisite or corequisite: Math 144. The first course of a two-semester sequence introducing the principles of particle and rigid body mechanics, with engineering applications. Force systems and resultants. The equilibrium of particles and rigid bodies. Friction. The kinematics and kinetics of particles. Work-energy and impulse-momentum principles and conservation laws.

ESM 242. ENGINEERING MECHANICS II. (3) Prerequisite: ESM 241. Prerequisite or corequisite: Math 244. Properties of areas and volumes. The inertia tensor. Introduction to the dynamics of systems of particles and of rigid bodies. Energy and momentum methods. Plane motion of rigid bodies.

ESM 252. ESM LABORATORY I. (1) Prerequisite: EAD 211. The first of a series of laboratories designed to instruct the student in the use of laboratory equipment and to develop and apply the principles of experimentation and measurement. Three laboratory hours per week.

ESM 281. CONCEPTS OF ENGINEERING MECHANICS. (3) Prerequisite: Math 103A (plane trigonometry) or equivalent. Introduction to the concepts of forces, moments and stresses; mechanical properties of materials; mechanical failure and fracture; extensions to the behavior of various types of structures. Credits for this course may not be applied to the BSE or BET degrees.

ESM 311. THERMODYNAMICS I. (3) Prerequisites: EM 241 or Physics 221 and Math 271. First and second laws of thermodynamics. Work and heat. Thermodynamic probability and entropy. Ideal and real gases. Nonreactive mixture of gases. Availability and irreversibility.

ESM 312. THERMODYNAMICS II. (3) Prerequisite: ESM 311. General thermodynamic relations; equations of state and generalized charts. Combustion, dissociation and chemical equilibrium. Introduction to statistical thermodynamics.

ESM 321. INTRODUCTION TO ELECTROMAGNETIC FIELDS. (3) Prerequisite: EAD 211. A study of electric and magnetic fields using the vector formulation. Vector analysis. Electrostatics; potential functions, dielectrics, capacitance, energy and forces associated with electric fields, solution of Laplace's and Poisson's equations. Magnetostatics: vector potential functions, Lorentz forces, hysteresis, magnetic polarization and induction, and energy. Gauss's, Ampere's, Faraday's laws, etc., leading to the Maxwell equations.

ESM 322. ELECTROMAGNETIC WAVES. (3) Prerequisite: ESM 321. A study of Maxwell's equations, transmission line theory, plane waves in media, propagation of electromagnetic waves in various media. The phenomena of reflection and refraction at interfaces of two dissimilar materials. Guided electromagnetic waves in coaxial cables and waveguides.

ESM 331. INTRODUCTION TO ELECTRONIC MATERIALS. (3) Prerequisite: Physics 222 or 231. A survey of important classes of electronic materials and devices with examples from crystalline and amorphous semiconductors, junction and MOS devices, thermoelectrics, lasers and superconductors. Introduction to the quantum mechanics of electrons in solids, electron-atom interactions and energy band model, providing a basis for rationalizing a wide variety of electronic properties.

ESM 341. INTRODUCTION TO SOLID MECHANICS. (3) Prerequisite or corequisite: ESM 242 or prerequisite: ESM 241 and Math 244. An introduction to the engineering theory of deformable solids and its applications. Stress and deformation resulting from axial, torsion, and bending loads. Shear and moment diagrams. Mohr's circle for stress and strain, and buckling of columns. Inelastic behavior is considered as well as time and temperature effects.

ESM 342. INTRODUCTION TO FLUID MECHANICS. (3) Prerequisite: ESM 241 and Math 244. A first course in fluid mechanics introducing the basic concepts of a fluid and the fundamentals of ideal and real fluid flow. Topics covered include fluid statics, conservation principles, Bernoulli's equation, fluid flow in pipes, and measurement devices.

ESM 351. ESM LABORATORY II. (1) Prerequisite: junior standing in ESM. Laboratory experiments and development of basic experimental techniques and instrumentation necessary for static and dynamic measurements in the areas of engineering science, mechanics and materials. Three laboratory hours per week.

ESM 352. ESM LABORATORY III. (1) Prerequisite: ESM 351. Continuation of ESM 351. Three laboratory hours per week.

ESM 361. INTRODUCTION TO ENGINEERING MATERIALS. (3) Prerequisites: Chemistry 101 and Math 142. Classifications of engineering materials. Introduction to property/structure relationships. Ideal and defect atomic structures of solids with examples from metals, ceramics and polymers. Cold working and annealing effects. Phase equilibria in alloys; introduction to diffusional processes and transformation kinetics.

ESM 362. MECHANICAL BEHAVIOR AND STRENGTHENING OF SOLIDS. (3) Prerequisite: Chemistry 101, prerequisite or corequisite: ESM 341. Mechanical properties of materials including elastic behavior, plastic flow, fracture, creep, fatigue, elevated temperature effects. Correlation of properties with atomic and microscopic structure. Dislocation theory and its application to mechanical behavior and strengthening mechanisms. Alloy hardening effects; effects of processing and heat treatments. Applications in Fe-C alloys.

ESM 402. INTRODUCTION TO CONTINUA. (3) Prerequisites: ESM 341, 342. A unified treatment of those topics which are common to all continua. Stress, deformation and velocity fields, constitutive equations and field equations. Representative applications in solid, fluid and electromagnetic continua, including interaction problems.

ESM 411. HEAT TRANSFER. (3) Prerequisites: ESM 311 and 342. Steady and unsteady state heat conduction, forced and natural heat convection principles, radiative heat transfer, heat exchangers.

ESM 412. ENERGY CONVERSION I. (3) Prerequisites: ESM 311 and 342. Application of principles of thermodynamics, fluid flow

and heat transfer to internal combustion engines, compressors, turbines, heat exchangers, refrigeration, and cryogenics.

ESM 413. ENERGY CONVERSION II. (3) Prerequisite: ESM 311. Study of conversion of heat into power. Thermoelectric, magnetohydrodynamic engines, thermionic converters, solar and fuel cells.

ESM 414. DYNAMICS AND THERMODYNAMICS OF COMPRESSIBLE FLOW. (3) Prerequisites: ESM 311 and 342. Compressible flow equations, isentropic flow, normal shock waves. Fanno and Raleigh line flows. Nonsteady one dimensional flow.

ESM 422. ANTENNAS. (3) Prerequisite or corequisite: ESM 322. A study of radiation into free space, the point source, thin linear antenna, arrays of linear elements, aperture antennas, impedance, methods of feeding, matching and termination. A survey of various antenna systems.

ESM 426. ACOUSTICS. (3) Prerequisite or corequisite: ESM 322 or Physics 331. Vibrations and simple vibrating systems; radiating systems; plane waves of sound; dynamic analogies, microphones and other acoustic transducers; acoustic measurements.

ESM 431. PHYSICAL ELECTRONICS. (3) Prerequisite: ESM 322 or Physics 331. Dynamics of charged particles; electron motion in electromagnetic fields; types of electron emission; beam focusing; longitudinal and transverse beam waves; microwave generation; plasma parameters.

ESM 432. QUANTUM AND PARAMETRIC ELECTRONICS. (3) Prerequisites: ESM 322 or Physics 331. Introduction to the concepts of quantum mechanics; spin energy levels; elementary masers, optical resonance; traveling wave tubes; backward wave oscillators.

ESM 434. SOLID STATE ELECTRONICS. (3) Prerequisite: ESM 321 or ESM 331 or Physics 241 or consent. Electron theories of solids. Quantum mechanical foundations. Free electron and band models. Electron transport processes in metallic and nonmetallic conduction; diffusion and drift phenomena. Theory of semiconductors.

ESM 441. INTERMEDIATE SOLID MECHANICS. (3) Prerequisite: ESM 341. More advanced treatment of the topics covered in ESM 341. Included are failure theories, energy methods, plane stress—plane strain analysis, torsion of prismatic bars, curved beams, etc.

ESM 442. INTERMEDIATE FLUID MECHANICS. (3) Prerequisites: ESM 311 and 342. A continuation of ESM 342. Topics covered include boundary layers, flow over body surfaces, compressible flow, potential flow, turbomachinery and propulsion devices.

ESM 443. EXPERIMENTAL STRESS ANALYSIS. (3) Two lectures and a two-hour lab per week. Prerequisite: ESM 341. Theoretical and experimental techniques of stress and strain analysis, with experimental emphasis on strain gages and instrumentation. Brittle coatings and photoelasticy are also considered.

ESM 444. INTERMEDIATE DYNAMICS. (3) Prerequisite: ESM 242 and Math 271. Further studies in the dynamics of particles and rigid bodies, with engineering applications. An introduction to Lagrange's equations of motion. Multi-degree-of-freedom vibrations.

ESM 451. ESM PROJECTS LABORATORY I. (1) Prerequisite: senior standing in ESM. The first of a two-semester sequence leading to a major laboratory project or design project involving integration of the various areas of engineering science. The student is responsible for conceiving the project, planning the work schedule, conducting the work, and writing a final report.

ESM 452. ESM PROJECTS LABORATORY II. (2) Prerequisite: ESM 451. Continuation of ESM 451.

ESM 461. SOLID STATE TRANSFORMATIONS. (3) Prerequisite: ESM 361. Thermodynamics, morphology and kinetics of solid state transformations. Diffusion and absolute reaction rate theory; crystallographic nature of phase transformations; nucleation and growth processes; precipitation and oxidation reactions.

ESM 462. MATERIALS PRODUCTION AND PROCESS. (3) Prerequisite or corequisite: ESM 362. Applications of thermodynamics and chemistry to extractive and process metallurgy. Fundamental principles of materials forming operations. Casting, mechanical working and joining methods.

ESM 464. DIFFRACTION AND SPECTROSCOPIC STUDIES OF MATTER. (3) Prerequisite: senior standing in engineering or science and consent of instructor. Atomic arrangements in crystalline and non-crystalline forms of matter. Symmetry properties of crystals and correlations with anisotropic physical properties. X-ray diffraction and spectroscopic analysis of matter. Theoretical and practical aspects of determining atomic and molecular arrangements in solids and fluids. Energy dispersive and nondispersive spectroscopic methods. Discussions of specific structures and techniques of current interest with examples drawn from polymeric, biological, metallic and non-metallic areas.

ESM 490. SPECIAL TOPICS IN ENGINEERING SCIENCE, MECHANICS AND MATERIALS. (Variable credit 1-4 hours. May be repeated for credit.) Prerequisite: consent of the department. The course will build upon and synthesize the knowledge the students have gained from the engineering science, mathematics and physical sciences stem of the core curriculum. The specific topics covered in each separate offering of the course will serve as the vehicle for teaching engineering analysis, synthesis and

design, while simultaneously affording an opportunity for the students to point themselves toward an area of specialization.

ESM 491. UNDERGRADUATE RESEARCH. (Variable credit 1-4 hours. May be repeated for credit.) Prerequisite: consent of the department. This course involves the independent study of a theoretical and/or experimental problem in a specialized area of engineering science, mechanics and materials. The student can pursue some particular area or problem to a depth much greater than can be undertaken within the scope of existing courses. The topics of the investigation may originate from the student or from the faculty member who will supervise the study.

ESM 492. INDIVIDUALIZED STUDY. (Variable credit 1-3 hours. May be repeated for credit.) Prerequisite: consent of the department. Supervised individual study within an area of a student's particular interest which is beyond the scope of existing courses.

DEPARTMENT OF URBAN AND ENVIRONMENTAL ENGINEERING

Chairman: Professor King
Professor: Celanese Professor of Civil Engineering Bell
Associate Professors: Bayer, Evett
Assistant Professor: Zulfacar
Lecturers (part-time): Browning, Sills, Smith

One of the major thrusts of the University of North Carolina at Charlotte is the establishment of ways in which urban problems can be identified and solutions found. The College of Engineering has in turn initiated a program in which urban and environmental aspects of engineering are emphasized. Traditionally many of these concerns have been treated within civil engineering, and all of the civil engineering courses at UNCC have been continued within the Department of Urban and Environmental Engineering. In the curriculum, urban and environmental issues are the bases used for example problems, for student exercises, and for independent study projects. In this department, the candidate for the degree of Bachelor of Science in Engineering may take a curriculum that prepares him or her to become a professional civil engineer upon completion of legal requirements as specified by the individual states.

The urban and non-urban problems of the environment can neither be distinctly separated, nor dealt with independently. The traditional functions of civil engineers to provide buildings and bridges, dams, harbors and canals, railroads and other facilities must be continued, while at the same time the urgent problems of the environment are assessed and solved. Thus, the department emphasizes urban problem areas associated with structural engineering, transportation engineering, and environmental engineering. For example, more emphasis is given to metropolitan traffic, while concern is continued in the area of interstate highways; and more emphasis is given to water pollution problems while continuing the study of water resource systems and the building of water delivery systems for an increasing population.

Some students will wish to plan early in their undergraduate careers for continuation of their engineering studies beyond the first degree. The large number of fields of graduate study which can logically follow the curriculum offered by the Department of Urban and Environmental Engineering may influence how each student plans a program of study. The minor option sequence allows flexibility for concentration in specific areas and each student will design a minor option program with an adviser in order to achieve an individual goal.

Within the Department of Urban and Environmental Engineering, there are two options available, the professional option and the liberal option. For the professional option, the minor option must contain at least six hours of course work dealing with engineering science, analysis, synthesis or design with the remaining nine hours being in engineering, science, mathematics, business or architecture.

For those who choose the liberal option, the minor option courses may be selected from the social and behavioral sciences.

The professional option in Urban and Environmental Engineering is accredited by the Engineers' Council for Professional Development.

The 42 hours of departmental requirements for UEE are:

CHE 102L - Principles of Chemistry Laboratory	1
EAD 258 - Basic Electrical Engineering Laboratory	1
EAD 268 - Basic Electrical Engineering	3
ESM 341 - Mechanical Behavior of Solids	3
ESM 342 - Fluid Mechanics	3
UEE 261 - Surveying	3
UEE 321 - Structural Analysis	3
UEE 341 - Environmental Engineering I	3
UEE 355 - Laboratory I	1
UEE 356 - Laboratory II	1
UEE 361 - Transportation Engineering I	3
UEE 421 - Structural Steel Design I	3
UEE 425 - Reinforced Concrete Design I	3
UEE 455 - Laboratory III	1
UEE 456 - Laboratory IV	1
UEE 468 - Geotechnical Engineering	3
UEE 471 - UEE Systems and Design I	3
UEE 472 - UEE Systems and Design II	3
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CURRICULUM OUTLINE
FOR THE
BACHELOR OF SCIENCE IN ENGINEERING

URBAN AND ENVIRONMENTAL ENGINEERING

The suggested order for taking courses is:

Freshman Year

Physics 101	4	Physics 102	4
Engineering 101A	1	Engineering 102A	1
Engineering 101B	1	Engineering 102B	1
Engineering 101C	1	Engineering 102C	1
English 101	3	Mathematics 141	4
UEE 261	3	Mathematics 105	1
Humanities or S.S.	3	Humanities or S.S.	3
	16		15

Sophomore Year

Math 142	4	ESM 242	3
Chem 101	3	Math 241	3
Chem 101L	1	Chem 102	3
ESM 241	3	Chem 102L	1
EAD 258	1	ECO 201 *or* 202	3
EAD 268	3	Humanities or S.S.	3
	15		16

Junior Year

Mathematics 271	3	ESM 342	3
ESM 341	3	Phy 222	3
UEE 321	3	UEE 356	1
UEE 341	3	Minor	3
UEE 355	1	Minor	3
UEE 361	3	Humanities or S.S.	3
	16		16

Senior Year

ESM 311	3	UEE 456	1
UEE 421	3	UEE 468	3
UEE 425	3	UEE 472	3
UEE 455	1	Minor	3
UEE 471	3	Minor	3
Humanities or S.S.	3	Minor	3
	16		16

URBAN AND ENVIRONMENTAL ENGINEERING

Structural Engineering

UEE 281. CONCEPTS OF STRUCTURAL ENGINEERING I. (3) Prerequisite: Mathematics 100 or Computer Science 100. For students not majoring in engineering or technology. A brief introduction to structural materials and the concepts of stress and strain as applied to structures; structural statics; beams and columns; laboratory demonstrations and class problems.

UEE 282. CONCEPTS OF STRUCTURAL ENGINEERING II. (3) Prerequisite: UEE 281. A continuation of UEE 281 involving more complex structures; interconnected beams and columns; steel and reinforced concrete; buildings and bridges; arches, plates and shells; live loads, wind loads, and earthquake effects; laboratory demonstrations and class problems; computer applications in structural problems.

UEE 321. STRUCTURAL ANALYSIS. (3) Prerequisite: ESM 241. Analysis of statically determinate and indeterminate beams, trusses and frames under fixed and moving loads to include shear and moment diagrams, rough deflected shapes and deflections. Influence lines and criteria for moving loads. Indeterminate analyses to include methods of slope deflection, moment area, moment distribution and conjugate beams.

UEE 421. STRUCTURAL STEEL DESIGN I. (3) Prerequisites: UEE 321 and ESM 341. Analysis and design of structural steel components with emphasis on the fundamental theories necessary for a thorough understanding of the design procedure. Individual members are considered, including pure tension, pure compression, uniaxial and biaxial bending and combined bending and axial stresses. Current AISC Specifications used.

UEE 422. STRUCTURAL STEEL DESIGN II. (3) Prerequisite: UEE 421. Analysis and design of structural steel systems with emphasis on the fundamental theories necessary for a thorough understanding of the design of complete structures. Welded, riveted and bolted connections. Design of steel buildings, composite design, built-up beams and plate girders. Plastic analysis and design. Emphasis to be placed on various topics partially dependent upon student interest and goals. Current AISC Specifications used.

UEE 424. ADVANCED STRUCTURAL ANALYSIS. (3) Prerequisite: UEE 321. A continuation of UEE 321. Fundamental and special methods of analysis of statically determinate and indeterminate structures. Topics include deflection theory, energy theory, variable cross-section analysis, multistory moment distribution.

UEE 425. REINFORCED CONCRETE DESIGN I. (3) Prerequisites: UEE 321 and ESM 341. Analysis and design of reinforced

concrete components with emphasis on fundamental theories. Mechanics and behavior of reinforced concrete. Flexural members to include singly and doubly reinforced beams of various cross sections (rectangular, T-beams, joists, one-way slabs and others.) Shear in beams and columns. Short columns to include uniaxial and biaxial bending. Construction of short column interaction diagrams. Introduction to footings. Current ACI Specifications used.

UEE 426. REINFORCED CONCRETE DESIGN II. (3) Prerequisite: UEE 425. Analysis and design of reinforced concrete components and systems with emphasis on the fundamental theories necessary for a thorough understanding of concrete structures. Concentrically loaded slender columns, slender columns under compression plus bending. Footings and retaining walls. Continuous beams and frames. Buildings and bridges. Precast and prestressed concrete. Emphasis to be placed on various topics partially dependent upon student interest and goals. Current ACI Specifications used.

UEE 428. MATRIX METHODS OF STRUCTURAL ANALYSIS. (3) Prerequisites: UEE 321 or consent of instructor. Flexibility method of analysis for planar structures. Stiffness method of analysis for planar orthogonal, planar non-orthogonal and three-dimensional structures with emphasis on computer applications.

UEE 455. LABORATORY III. (1) Prerequisites or corequisites: UEE 421 and UEE 425. Design of concrete mixes; testing of standard concrete cylinders, beams and columns. Testings of steel tensile members and beams. Analysis and design of simple structural systems. Three laboratory hours per week.

Environmental and Water Resources Engineering

UEE 341. ENVIRONMENTAL ENGINEERING I. (3) Admission by consent of instructor. Theory of supply, transmission and distribution of water; collection of waste-water; water quality; theory and design of water and waste-water treatment processes.

UEE 342. ENVIRONMENTAL ENGINEERING II. (3) Prerequisite: UEE 341. A continuation of UEE 341. Industrial wastes; stream and reservoir pollution abatement; river basin and estuarine studies; solid waste disposal and ground water pollution; air pollution sources, dispersion, and deposition; environmental effects of radioactivity.

UEE 355. LABORATORY I. (1) Prerequisite or corequisite: UEE 341. Laboratory problems in environmental engineering. Emphasis on analysis and presentation of results as well as on the significance of results as they affect theory and/or practice. Three laboratory hours per week.

UEE 444. ENGINEERING HYDROLOGY. (3) Admission by consent of instructor. A quantitative study of the various components of the water cycle, including precipitation, runoff, ground

water flow, evaporation and transpiration, stream flow. Hydrograph analysis; flood routing; frequency and duration; reservoir design.

UEE 446. ENGINEERING HYDRAULICS. (3) Prerequisites: ESM 342. Problems of fluids as applied in civil engineering; open channel flow; dams and spillways; water power; river flow and backwater curves; pipe networks, fire flow, sewage collection, groundwater; computer applications pertaining thereto.

Transportation and Geotechnical Engineering

UEE 261. SURVEYING. (3) Admission by consent of instructor. Elements of plane surveying including taping, transit, level, stadia, plane table, topographic surveying and mapping, care and adjustment of instruments; error adjustments; area and earthwork computations; introduction to photogrammetry; computer techniques. Periods of laboratory, lecture and field work will be scheduled.

UEE 356. LABORATORY II. (1) Prerequisite: UEE 361. Design of basic highway configurations involving route layout, geometric design, and earthwork operations. Three laboratory hours per week.

UEE 361. TRANSPORTATION ENGINEERING I. (3) Admission by consent of instructor. Development of transportation facilities; planning, location and economic considerations, with special emphasis on land transportation.

UEE 362. TRANSPORTATION ENGINEERING II. (3) Prerequisite: UEE 361. Urban transportation considerations: travel characteristics of urban transportation systems; analysis of transportation-oriented studies; analytic methods of traffic generation, distribution and assignment; urban layout and growth patterns.

UEE 456. LABORATORY IV. (1) Prerequisites or corequisites: ESM 341 and UEE 468. Demonstrations and experiments verifying theoretical bases of geotechnical engineering; cohesionless and cohesive soils. Three laboratory hours per week.

UEE 464. TRAFFIC ENGINEERING. (3) Prerequisite: UEE 361. Characteristics of vehicles and vehicle operators; investigative studies in traffic engineering; planning and implementation of traffic control devices; design of parking facilities; implications of traffic engineering decisions.

UEE 468. GEOTECHNICAL ENGINEERING. (3) Prerequisite: ESM 341. Theoretical bases of geotechnical engineering to include shear, stress and strain in soils and failure of soils; foundations; permeability and pore pressure; retaining structures, slope stability and earth dams; soil-structure interaction; soil dynamics; liquefaction; earthquake effects.

UEE 412. COMPUTER APPLICATIONS IN URBAN AND ENVIRONMENTAL ENGINEERING. (3) Senior standing in engineering. The application of the digital computer to various types of urban and environmental engineering problems. Examinations in depth of selected urban and environmental engineering problems.

UEE 432. URBAN ENGINEERING. (3) Admission by consent of instructor. An examination of those societal problems of metropolitan regions most amenable to engineering solutions. Current urban literature will be reviewed in seminar, and selected topics amenable to engineering analysis will be studied. Written reports will be presented.

UEE 471. UEE SYSTEMS AND DESIGN I. (3) Admission by consent of instructor. Introduction to systems engineering as applied to urban and environmental engineering problems. Organization of "consulting engineering companies" for preliminary planning, information gathering and data analysis on a specific urban and environmental engineering problem area chosen for each class. Assignment and scheduling of tasks resulting in contracts to be completed in UEE 472.

UEE 472. UEE SYSTEMS AND DESIGN II. (3) Admission by consent of instructor. Completion of "consulting engineering company contracts" established in UEE 471, resulting in a comprehensive written report and verbal presentation to the College of Engineering faculty and practicing engineers.

UEE 490. SPECIAL TOPICS IN UEE. (Variable credit 1-4 hours. May be repeated for credit.) This course will be devoted to specific new areas which are emerging in the various fields of urban and environmental engineering. The course will build upon and synthesize the knowledge the students have gained from the engineering science, mathematics and physical sciences stems of the core curriculum.

UEE 491. UNDERGRADUATE RESEARCH IN UEE. (Variable credit 1-4 hours. May be repeated for credit.) Prerequisite: consent of department. This course involves the independent study of theoretical and/or experimental problem in a specialized area of UEE. The student can pursue some particular area or problem to a depth much greater than can be undertaken within the scope of existing courses. The topics of the investigation may originate from the student or from the faculty member who will supervise the study.

UEE 492. INDIVIDUALIZED STUDY. (Variable credit 1-3 hours. May be repeated for credit.) Prerequisite: consent of the department. Supervised individual study within an area of a student's particular interest which is beyond the scope of existing courses.

DEPARTMENT OF ENGINEERING TECHNOLOGY

Chairman: Associate Professor Phelps
Associate Professors: Christie, Grant, Elliott, Liu
Assistant Professors: Mobley, Priebe, Sheppard
Wang, Willis, Young
Lecturers: (part-time): Chatterjea, Duncan, Hayes,
Hoffman, Kulik, Mills, Petty,
Powers, Ramirez, Smith, Whisenant, Wilkinson

Engineering and technical education have undergone considerable change in the last 25 years. The complexities of space exploration, nuclear power, communications systems, environmental control, information processing, transportation systems, etc. have demanded a great increase in the involvement of professional engineers in theoretical and analytical work. This has resulted in a much greater emphasis upon research and development, science and mathematics in professional engineering curricula.

At the same time, after the more complex devices and systems have been engineered, their design, development and operation require the sophisticated knowledge and skills of practitioners of what might be called the "applied engineering sciences." Programs dedicated to fulfilling this urgent need are now developing rapidly over the United States. The aim and content of these programs are distinctly different from professional engineering curricula.

To provide the appropriate distinction from both the theoretical-professional engineers and from the engineering technicians who are graduated from the two-year technical institutes, the designation "engineering technologist" is being used throughout the United States for the graduates of four-year applied engineering or "engineering technology" curricula.

The two-year technical institute programs in North Carolina and in many other states provide excellent foundation for engineering technology curricula. Therefore, the engineering technology program at the University of North Carolina at Charlotte is limited to the junior and senior years, and an Associated in Applied Science degree is required for admission.

Each of the following Baccalaureate Engineering Technology curricula is accredited by the Engineers' Council for Professional Development (ECPD).

Civil Engineering Technology
Computer Electronic Engineering Technology
Mechanical Engineering Technology

The ECPD is recognized by the National Commission on Accreditation as the appropriate accrediting agency of both Engineering and Engineering Technology curricula.

Requirements for the Degree of Bachelor of Engineering Technology

Residence

The residence requirements for the Bachelor of Engineering Technology degree at the University of North Carolina at Charlotte specify that the last 30 semester hours of credit must be earned at UNCC and that the last 12 semester hours of work in the student's major field must be earned at this University.

Scholastic

A minimum level of scholastic achievement is required of all students in order to continue as a degree candidate. In order to be eligible for the B.E.T. degree, a minimum Quality Point Average (QPA) of 2.00 on all courses attempted at UNCC is required. In addition, a minimum QPA of 2.00 on all courses attempted in the College of Engineering is required.

Course Requirements

Prerequisite courses for entering the Engineering Technology program normally taken at a technical institute or junior college, are listed on page 151 and 152.

In addition, the following UNCC courses are required for the B.E.T. degree:

Title	*Semester Hours*
Chemistry 101 (or other Natural Science)	3*
Computer Science 100	3
Economics 201 or 202	3
Humanities or Social Science Electives	12
Free Electives	3
Major Electives	6*
Engineering Analysis	6*
Specified courses in major area of study	28*
Total	64
Transfer credit for A.A.S. degree	64
Total number of semester hours required for B.E.T. degree	128

Requirements for Admission

A student who has graduated from a technical institute or the technical division of a junior college and who wishes to enter the Engineering Technology program at UNCC must meet the following requirements:

1. Have an Associate in Applied Science degree in one of the fol-

*Differences exist for CET, MET curricula.

lowing fields:

Civil, Construction, Electronic, Industrial or Mechanical Engineering Technology, Design and Drafting or Architectural Technology.

2. Have an overall quality-point average of at least 2.20 (based on the 4.0 system) on all courses taken at the technical institute, and

3. Have satisfactorily completed the prerequisite courses for the option which he plans to enter (see below).

There is considerable variance in the contents of technical institute programs throughout the United States. Should this result in entrance deficiencies, the student can usually remove these deficiencies at Central Piedmont Community College in Charlotte prior to admission to UNCC, or during his first year at UNCC.

Background Courses Required for Entering the Bachelor of Engineering Technology Program

The student must have satisfactorily completed the following subjects in his or her two-year associate degree program.

Quarter hours indicated are minima.

Descriptive Title	*Quarter Hours*
English Composition, Technical Writing and/or Public Speaking	9
Algebra, Trigonometry and Analytic Geometry with Calculus	13
*Differential and Integral Calculus	5
General Physics (with Laboratory)	8
*Physics or Chemistry (with Laboratory)	4
*Humanities or Social Sciences	6
*Non-technical Subjects	3
Technical Courses in Major Area	48**
Total	96

**The 48 hours of major work must include courses covering all of the subjects in any one of the areas shown on the following page.

*These courses can be taken at UNCC.

Electrical
Drafting
D.C. Circuits
A.C. Circuits
Electronic Instruments and Measurements
Vacuum Tubes and Transistors
Transistor Amplifiers and Circuits
Pulse (Wave-shaping) Circuits
Communication Electronics or Control Systems

Civil
Drafting
*Surveying
Statics
Strength of Materials
*Properties of Concrete

Mechanical
Drafting
Machine Processes
Statics
Machine Design or Design Drafting
*Metallurgy
Strength of Materials

Construction (Emphasis of Civil)
Architectural Drafting
Architectural Engineering Materials and Methods
*Surveying
Statics and Strength of Materials
Construction Estimates and Costs
Codes, Contracts, and Specifications
*Properties of Concrete

Industrial (Emphasis of Mechanical)

Drafting
Statics and Strength of Materials
Production Planning
Work Measurement, or Time in Motion, or Methods Analysis

CURRICULUM REQUIREMENTS FOR THE BACHELOR OF ENGINEERING TECHNOLOGY DEGREE

Civil Engineering Technology

An ECPD Accredited Baccalaureate Engineering Technology Curriculum

Junior Year

CET 311	3	CET 312	3
CET 321	3	CET 332	3
CET 351	1	CET 354	1
ET 370	3	ET 371	3
CSC 100	3	ECON 202 or 201	3
CHE 101 or E.S. 102** (a)	4	Humanities or Social Science Electives (b)	3
	17		16

*These courses can be taken at UNCC.
**Students who are primarily interested in environmental technology must take Chemistry 101. Those who are primarily interested in construction must take Earth Science 102.

Senior Year

CET 411	3	CET 462	3
CET 441	3	Major Elective (e)	6
ET 473	3	Humanities or Social Science Elective (b)	3
Major Elective (e)	1	Free Elective (d)	3
Humanities or Social Science Elective (b)	3		
Humanities or Social Science Elective (b)	3		
	16		15

Land Surveying emphasis of Civil Engineering Technology

The curriculum in Civil Engineering Technology which includes not less than six semester hours of surveying subjects (CET 472 and CET 473) is accredited by the North Carolina State Board of Registration for Professional Engineers and Land Surveyors, and such curriculum will be accepted as credit for four years of land surveying experience towards the registration requirements of this board.

CIVIL ENGINEERING TECHNOLOGY CONSTRUCTION ENGINEERING TECHNOLOGY EMPHASIS

Junior Year

CET 311	3	CET 312	3
CET 321	3	MET 481	3
CET 351	1	ET 371	3
ET 370	3	ECON 202 (or 201)	3
CSC 100	3	Humanities or Social Science Elective (b)	3
ES 102	4		
	17		15

Senior Year

CET 411	3	CET 412	3
CET 481	3	Major Electives (e)	6
ET 482	3	Humanities or Social Science Elective (b)	3
CET 355	1	Free Elective (d)	3
Humanities or Social Science Elective (b)	3	Major Elective (e)	1
Humanities or Social Science Elective (b)	3		
	16		16

Electrical Engineering Technology
Computer Electronics Engineering Technology Option

An ECPD Accredited Baccalaureate
Engineering Technology Curriculum

Junior Year

EET 351	1	EET 311	3
EET 381	3	EET 312	3
ET 371*	3	EET 382	3
CSC 100	3	ET 471	3
CHE 101 (a)	3	Humanities or Social Science Elective (b)	3
ECON 201 (or 202)	3	EET 352	1
	16		16

Senior Year

EET 481	3	EET 412	3
EET 452	1	EET 451	1
EET 411	3	Humanities or Social Science Elective (b)	3
EET 385	3	Humanities or Social Science Elective (b)	3
Free Elective (d)	3	Major Elective (e)	3
Humanities or Social Science Elective (b)	3	Major Elective (e)	3
	16		16

Mechanical Engineering Technology

An ECPD Accredited Baccalaureate
Engineering Technology Curriculum

Junior Year

MET 311	3	MET 312	3
MET 331	3	MET 322	3
MET 351	1	MET 352	1
ET 371*	3	ET 471	3
CSC 100	3	ECON 202 (or 201)	3
Humanities and Social Science Elective (b)	3	CHE 101 (a)	3
	16		16

*For students who do not have a strong background in algebra and trigonometry. It is recommended that ET 370 be taken prior to ET 371. This should be taken during the summer preceding his or her regular first semester if the student plans to complete the program in two years.

Senior Year

MET 411	3	MET 453	1
MET 341	3	MET 472	3
MET 452	1	Major Elective (e)	3
Major Elective (e)	3	Humanities or Social Science Elective (b)	6
MET 462	3	Free Elective (d)	3
Humanities or Social Science Elective (b)	3		
	16		16

Mechanical Engineering Technology
Industrial Engineering Technology Emphasis

Junior Year

ET 371*	3	MAT 122	3
MET 311	3	MET 322	3
CSC 100	3	MET 353	1
IET 311	3	MET 312	3
IET 351	1	IET 411	3
Humanities or Social Science Elective (b)	3	Humanities or Social Science Elective (b)	3
	16		16

Senior Year

IET 431	3	GGY 313	3
MAT 311	3	IET 412	3
ECON 201 or 202	3	IET 452	1
IET 421	3	Major Elective (e)	3
IET 451	1	Humanities or Social Science Elective (b)	3
Humanities or Social science Elective (b)	3	Free Elective (d)	3
	16		16

Notes

(a) A student who has previously taken a college level course in general chemistry shall substitute for this requirement another course in chemistry, physics, biology, or earth science 101, 341 or 344, or an approved course in physics, as shown in the table below.

*For students who do not have a strong background in algebra and trigonometry, it is recommended that ET 370 be taken prior to ET 371 This should be taken during the summer preceding his or her regular first semester if the student plans to complete the program in two years.

Students who have previously taken	*Shall take at UNCC*
3 quarters of physics and no chemistry	Chemistry 101
2 quarters of physics and 1 quarter of chemistry	Physics 102 (Physics 101 with permission)
3 quarters of physics and at least 1 quarter of chemistry (4 qtr. hrs.)	Earth Science 101 or 102, Biology 101, or Physics 103

(b) Humanity and social science elective must be selected from a current list of approved courses which is maintained in the departmental office and shall include a minimum of one 200 and one 300-level course. A coherent plan of study covering all elective courses must be submitted by the student and approved by his or her adviser before the student enrolls in the first H/SS elective.

(c) Major electives must be 300 or 400-level courses related to the student's field of specialization, or 300 or 400-level course in Business Administration.

(d) Free electives are intended to provide the student an opportunity to take an additional departmental major course, to investigate other areas of interest outside the College of Engineering, to support an upper-division sequence in the humanities or social science, or to study a foreign language.

Courses selected as free electives should normally be 200-level or higher and must be approved by the student's adviser after the student has outlined the sequence of electives that the student plans to pursue. No course may be taken for elective credit that covers material for which the student has received credit in another course. A maximum of three semester hours credit is allowed in Physical Education.

Engineering Technology

An engineering technology course may be used for elective or minor credit by a student in another major only with the prior approval of the student's major department and the department of Engineering Technology.

ET 370. BASIC ENGINEERING ANALYSIS. (3) Prerequisite: college algebra, trigonometry and analytic geometry. A course designed to give students intensive practice in the methods of solving engineering problems which require a knowledge of algebra, determinants, trigonometry and analytic geometry.

ET 371. ENGINEERING ANALYSIS I. (3) Prerequisite: ET 370 differential and integral calculus. Methods of solving engineering problems which involve the differentiation and integration of algebraic, trigonometric and logarithmic functions; use of integral tables.

ET 471. ENGINEERING ANALYSIS II. (3) Prerequisite: ET 371. A study of constant coefficient linear differential equations, including nonhomogeneous equations; Laplace transforms and the use of Laplace transform tables; applications to the analysis of dynamic systems.

ET 473. ENGINEERING ANALYSIS III. (3) Prerequisite: CSC 100 and ET 371. An introduction to elementary numerical methods which are useful in the solution of engineering problems on the digital computer. Emphasis is placed on applications to civil engineering technology.

ET 481. COMPUTER GRAPHICS TECHNOLOGY. (3) A study of the use of computer graphics as a design drafting tool. The course will utilize computer driven plotters and digitizer to prepare engineering drawings and illustrations.

ET 482. PROJECT MANAGEMENT TECHNOLOGY. (3) Use of CPM and PERT network analysis for planning, managing and controlling projects.

ET 490. SPECIAL TOPICS IN ENGINEERING TECHNOLOGY. (Variable credit, 1-4 hours. May be repeated for credit.) Prerequisite: senior standing in Engineering Technology or consent of the department. This course will be devoted to specific new areas which are emerging in the various fields of engineering technology. Given at the senior level, the course will build upon the knowledge the students have gained from their engineering technology curriculum.

Civil Engineering Technology

CET 250. PROPERTIES OF MATERIALS. (4) Laboratory testing of concrete, metal and wood materials. Emphasis on the development and analysis of stress-strain characteristics, using ASTM

specifications with regard to testing procedures. Three laboratory hours per week. No credit toward degree requirements for Engineering Technology majors.

CET 311. STRUCTURAL ANALYSIS I. (3) Prerequisite: elementary courses in statics and strength of materials. Prerequisite or corequisite: ET 370. An introduction to the basic concepts and principles of structural analysis relating to beams, trusses and frame structures. Analysis of statically determinate structures under fixed and moving loads; influence lines for moving loads. Deflection of structures. Emphasis on practical aspects of structural analysis.

CET 312. STRUCTURAL ANALYSIS II. (3) Prerequisite: CET 311. Analysis of statically indeterminate structures using the method of three-moments, methods of least work, method of slope deflection and the moment-distribution method. An introduction to matrix methods of structural analysis.

CET 321. FOUNDATIONS AND EARTHWORK. (3) Prerequisite or corequisite: ET 370. A study of the basic design and construction of foundations. The background theories are generally introduced in concise forms as formulas or charts. Emphasis on practical aspects of foundation design and earthwork construction.

CET 332. HYDRAULICS. (3) Prerequisite or corequisite: ET 370. A study of the fundamental principles of hydraulics and their applications in engineering practice, including the fundamentals of fluid flow through orifices, tubes and pipes, in open channels, and over weirs.

CET 351. SOIL TESTING LABORATORY. (1) Prerequisite or corequisite: CET 321. A laboratory designed to familiarize the student with the common laboratory soil tests and analysis procedures with emphasis on the significance of the various tests, the testing procedures and the detailed computations.

CET 354. ASPHALT AND ASPHALT MIXTURES LABORATORY. (1) The study of physical properties of asphalt, of aggregates and their combinations, principles and practice in the design, construction and control of asphalt mixtures; laboratory tests for asphalts, aggregates, and mixture design including specimen preparation and stability evaluation. Three laboratory hours per week.

CET 355. CONSTRUCTION MATERIALS LABORATORY. (1) Three laboratory hours each week. A review of applicable standard specifications and methods of testing a variety of construction materials.

CET 411. REINFORCED CONCRETE DESIGN. (3) Prerequisite: CET 312. Design of rectangular beams, T-beams, columns, reinforced concrete floor systems and reinforced concrete footings, according to the ACI code.

CET 412. STRUCTURAL STEEL DESIGN. (3) Prerequisite: CET 312. Design of beams and columns, floor framing, tension and compression members, riveted and welded connections, and plate girders according to AISC specifications.

CET 413. WOOD STRUCTURAL TECHNOLOGY. (3) Prerequisite: CET 311. Design of floors, beams, columns and trusses of both solid and glued laminated wood; includes wood joints and concrete forms.

CET 441. HIGHWAY DESIGN AND CONSTRUCTION. (3) An introduction to highway planning, economic considerations and traffic engineering. Design and construction of modern highways including grade separations and interchanges.

CET 442. PAVEMENT DESIGN. (3) Prerequisite: CET 441. A study of stresses in flexible and rigid pavements, and properties of pavement components. Design of rigid and flexible pavements. A discussion of pavement performance and failures and of pavement strengthening.

CET 451. PHOTOGRAMMETRY. (1) Prerequisite: course in elementary surveying and CSC 100. An outline of the fundamental principles of photogrammetry and photogrammetric procedures used in engineering practice. Students learn how to use modern photogrammetric equipment.

CET 452. ENVIRONMENTAL LABORATORY. (1) Prerequisite or corequisite: CET 462. A laboratory designed to familiarize the student with the analysis of water and sewage and with problems related to environmental control.

CET 453. CONSTRUCTION ENGINEERING TECHNOLOGY FIELD LABORATORY. (1) Prerequisite: senior standing. A synthesis of prior work, using fundamental principles as applied in a directed project. Three laboratory hours per week.

CET 462. INTRODUCTION TO ENVIRONMENTAL ENGINEERING. (3) Prerequisite: CET 332. The study of water supply, treatment and distribution and of liquid-waste disposal systems.

CET 464. INTRODUCTION TO URBAN ENGINEERING. (3) The study of city planning, including street layout and lighting and the design of water, sewerage, storm drain, and solid-waste collection and disposal systems. Street maintenance and traffic analysis; air pollution control.

CET 466. INTRODUCTION TO AIR POLLUTION CONTROL TECHNOLOGY. (3) Prerequisite: consent of instructor. The study of the sources of air pollution, air quality and emission standards, monitoring of air quality and the control of air pollution.

CET 467. INTRODUCTION PUBLIC HEALTH ENGINEERING TECHNOLOGY. (3) Prerequisite: consent of instructor. A

study of the public health engineering in rural, urban and industrial centers with emphasis on water, housing, heating, cooling, ventilation, noise, milk, food, insects and rodents, monitoring and control.

CET 472. LAND SURVEYING. (3) Prerequisite: basic course in surveying. A study of the advanced principles and practice of land surveying. The study will prepare the student for the National Council of Engineering Examiners Land Surveyors examination and the State examination for Land Surveyors.

CET 473. CONTROL SURVEYING. (3) Prerequisite: Basic course in surveying. A study of the theory, equipment and data reduction of electronic distance measurements; control specifications, methods and problems in obtaining large area angular measurements; precise leveling triangulation with introduction to least square techniques.

CET 481. COST ESTIMATING I. (3) This course provides the student with the understanding of characteristics and methods in the application of construction materials. The study develops the methods and procedures for preparing quantity surveys.

CET 482. COST ESTIMATING II. (3) Prerequisite: CET 481. This course provides the student with estimating techniques applied to project work. Topics include sub-contractors, plant and overhead, profit, bidding, etc.

Electrical Engineering Technology

EET 311. ANALYSIS OF LINEAR NETWORKS. (3) Prerequisite: ET 371. Review of complex numbers and phasor notation. Steady state analysis of electrical networks using Kirchoff's laws; applications of various network theorems; magnetically coupled circuits; three-phase circuits.

EET 312. SEMICONDUCTORS. (3) Prerequisite or corequisite: EET 311 and EET 381. A study of the atomic structure and physical properties of semiconductor materials followed by a study of specific devices, such as unijunctions, field-effect transistors. Applications of these devices in specific circuits.

EET 351. ELECTROMECHANICAL TECHNOLOGY LABORATORY. (1) Prerequisite or corequisite: EET 381. Experiments illustrating basic motor/generator characteristics, the principles of operation and applications of feedback control systems, and the design of relay combinational switching circuits. Emphasis is placed on the writing and preparation of technical reports. Three laboratory hours per week.

EET 352. SEMICONDUCTORS AND CIRCUITS TECHNOLOGY LABORATORY. (1) Prerequisite: EET 351. Prerequisite or corequisite: EET 311, EET 312 and EET 381. Experiments illustrate (1) the characteristics of transistors and other semiconductor devices and methods of measuring various transistor parameters; (2)

the characteristics of several types of electrical networks, especially lead/lag networks, and also the determination of gain/phase characteristics (Bode plots) of amplifiers; and (3) the design of combinational switching networks and their implementation with discrete components. Three laboratory hours per week.

EET 381. INTRODUCTION TO LOGICAL DESIGN. (3) An introduction to Boolean algebra. Disjunctive and conjunctive canonical forms. Applications to the analysis and design of combinational switching circuits utilizing both relays and semiconductors. Minimization of switching functions. Design of multiple-output networks.

EET 382. LOGICAL DESIGN OF SEQUENTIAL CIRCUITS. (3) Prerequisite: EET 381. The description and classification of sequential switching circuits; the operation of the principal types of flip-flops. The analysis and design of pulse-mode and fundamental-mode sequential circuits including state-table reduction procedures.

EET 385. MINICOMPUTER PROGRAMMING. (3) Prerequisites: EET 381 and CSC 100. The major emphasis is placed on the principles of assembly-language programming of digital computers. Students learn to program a small-scale computer, to operate it and to run the programs which they write. The basic principles of operation of a digital computer are covered, especially as to how the computer responds internally to different elements in the program.

EET 411. TECHNOLOGY OF ACTIVE NETWORKS. (3) Prerequisites: EET 311 and EET 312. Prerequisite or corequisite: ET 471. A study of the black box approach to the analysis of amplifiers in general, junction transistors, small signal models, field effect transistors, feedback principles and applications, and pulse circuits.

EET 412. DIGITAL ELECTRONICS. (3) Prerequisites: EET 382 and EET 411. The analysis and design of pulse circuits using discrete components and the analysis of various forms of digital integrated circuits, including RTL, DTL, TTL, ECL and MOS logic. Other areas studied include the transmission of digital signals, power supply bussing, and decoupling, cross-talk and system noise.

EET 451. COMPUTER TECHNOLOGY LABORATORY. (1) Prerequisites: EET 452 and EET 481. Prerequisite or corequisite: EET 412. Students learn to communicate with a digital computer by means of a teletype terminal. They learn to operate an analog computer and to use it for solving certain types of differential equations. Experiments also illustrate the characteristics and applications of operational amplifiers, A/D converters, and D/A converters; interfacing the digital computer with analog devices; and displaying of information. Three laboratory hours per week.

EET 452. INTEGRATED CIRCUITS AND DIGITAL ELECTRONICS TECHNOLOGY LABORATORY. (1) Prerequisite: EET 352, EET 312 and EET 382. Experiments illustrating the characteristics of various types of digital integrated circuits and the

design and implementation of sequential switching networks using integrated circuits. Three laboratory hours per week.

EET 461. INDUSTRIAL INSTRUMENTATION. (3) Prerequisites: EET 311 or consent of instructor. A review of the basic physical principles that apply to the design of sensors and transducers, followed by a study of pneumatic and electrical measuring instruments and transducers. Emphasis is on the different methods available for measuring such quantities as pressure, temperature and flow rate and on the selection of the best method for typical applications that exist in the process industries.

EET 481. COMPUTER DESIGN. (3) Prerequisites: EET 382. Prerequisite or corequisite: EET 385. The function and operation of the various elements that comprise a digital computer; methods for performing arithmetic operations; types and operation of memories; operation of I/O equipment; machine codes and communication with the computer.

EET 483. MODULATION AND TRANSMISSION. (3) Prerequisite: ET 471. Prerequisite or corequisite: EET 411. An introduction to Fourier series. Frequency analysis of signals; amplitude, phase and pulse modulation methods.

EET 484. DESIGN OF REAL-TIME SYSTEMS. (3) Prerequisites: ET 371 or MATH 120 and EET 385 or CSC 201. An introduction to the nature, characteristics and applications of real-time computer systems. Basic probability theory and a brief introduction to queuing theory. The principal factors and techniques involved in the design of large-scale, real-time data-processing systems.

EET 486. MICROCOMPUTER APPLICATIONS. (3) Prerequisite: EET 481. Two (2) lecture hours and three (3) laboratory hours each week. A thorough study of the organization, capabilities and techniques of utilization of the Intel MCS-4 microcomputer set. Laboratory design projects will give the student the opportunity to design the soft-ware and the hardware interface for one or more typical applications of the MCS-4 microcomputer set.

Mechanical Engineering Technology

MET 311. KINEMATICS. (3) Prerequisite or corequisite: differential and integral calculus. The study of the relative motions of mechanisms of machines. Displacement velocity and acceleration relationships of elements of a mechanism as applied to mechanical power transmitting equipment.

MET 312. DYNAMICS. (3) Prerequisite: differential and integral calculus. The dynamic behavior of machine elements, translation and rotation of a rigid body, the principles of conservation of energy and momentum.

MET 322. STRENGTH OF MATERIALS. (3) Prerequisite or corequisite: differential and integral calculus. A course designed to

extend the student's knowledge of basic strength of materials with emphasis on applications to engineering problems. Included are the stress-strain relationships resulting from direct loads, torsional loads and bending loads, and also the results obtained from applying more than one of these loads simultaneously. Beam deflection and column loading.

MET 331. FLUID MECHANICS. (3) A study of the fundamental principles of fluid mechanics. Topics covered include manometry, buoyancy, forces on submerged bodies. Bernoulli's equation with applications, orifices, pipe losses and an introduction to hydrodynamics.

MET 341. THERMODYNAMICS. (3) Prerequisites: ET 371 and CHEM 101. The perfect gas law; the first and second laws of thermodynamics and their application to power and refrigeration cycles. Gasses and mixtures of gasses, especially air and water vapor. Introduction to heat transfer with applications.

MET 351. FLUID MECHANICS LABORATORY. (1) Prerequisite or corequisite: MET 331. Laboratory experiments relating to flow through conduits, the experimental determination of fluid properties, and the behavior of fluids in static and dynamic equilibrium.

MET 352. STRESS ANALYSIS LABORATORY. (1) Prerequisite or corequisite: MET 322. Experiments illustrating stress-strain relationships in engineering materials and the use of brittle coating, photo-elasticity, and electrical-resistance strain gauges.

MET 411. MACHINE DESIGN I. (3) Prerequisites: MET 312 and MET 322. The first part of a two-semester course designed to apply previously acquired skills, along with newly attained ones, toward the design and analysis of machine components.

MET 412. MACHINE DESIGN II. (3) Prerequisite: MET 411. A continuation of MET 411 with emphasis on new methods of problem solving and opportunities to integrate previously attained skills and knowledge into the design and optimization of machine system.

MET 432. FLUID POWER. (3) Prerequisite: MET 331. Mechanical and fluid power and the conversion of one to the other. Components and system efficiencies including those consisting of cascaded components. Performance evaluation of such hydraulic components as pumps, motors, valves and metering devices. Viscosity, bulk modulus, noise, optimum performance and system design will be considered.

MET 441. AIR CONDITIONING. (3) Prerequisite: MET 341. A study of the principles of heating and air conditioning, including calculation of heat loss and heat gain for buildings, heat and cooling systems, psychrometric principles, air distribution, refrigeration and related automatic control apparatus.

MET 442. DESIGN OF MECHANICAL SYSTEMS FOR BUILDING. (3) Prerequisite: MET 331 and MET 341. The study of

heating and air conditioning design involving chilled water and hot water piping, including pump sizing; water and sanitary system design; and sprinkler system design. The course will also include a study of the National Fire Code and the National Plumbing Code.

MET 443. MODERN TECHNIQUES IN ENERGY CONSERVATION AND UTILIZATION. (3) Prerequisites: MET 341 or consent of the instructor. An analysis of the traditional energy utilization systems and how they will be modified as required by the increasing scarcity and cost of traditional fossil fuels. Other more modern techniques of energy conversion and energy conservation will also be surveyed. Some typical topics that may be covered are solar energy, basic nuclear reactor technology, the ammonia based Rankine cycle, absorption refrigeration cycle, the heat pump cycle, techniques for energy conservation in new construction and techniques for retrofitting existing energy utilization systems.

MET 452. INSTRUMENTATION LABORATORY. (1) Prerequisite or corequisite: MET 462. A laboratory designed to give students practice in the use of the various instrumentation devices studied in MET 462.

MET 453. THERMODYNAMICS AND HEAT TRANSFER LABORATORY. (1) Prerequisite or corequisite: MET 341. Design projects and experimentation involving the fundamental principles of thermodynamics and heat transfer. Three laboratory hours per week.

MET 462. INSTRUMENTATION. (3) This course is intended for students having no background in electronics or electric circuits. Basic D.C. circuit theory, including Kirchoff's laws, is covered first, since the primary emphasis of the course is on electrical and electronic instruments. The nature and analysis of errors in measurements is also covered, followed by the theory of operation, selection criteria and application of the major types of electronic instrumentation.

MET 472. INDUSTRIAL CONTROLS. (3) Prerequisite: ET 471. An introduction to the theory of closed-loop control systems with emphasis on servomechanisms: a study of various types of process control systems used in industry including detailed treatment of numerical control systems.

MET 481. HEATING, VENTILATING, AIR CONDITIONING, PLUMBING, AND ELECTRICAL CONSTRUCTION SYSTEMS TECHNOLOGY. (3) Basic theory and practical application of heating, ventilating, air conditioning, plumbing, and electrical systems construction. Credit toward degree requirements only for students in the Construction Engineering Technology option.

Mechanical Engineering Technology—
Industrial Engineering Technology Emphasis

IET 311. METHODS ANALYSIS. (3) Analysis of work methods; a study of work measurement systems.

IET 351. METHOD ANALYSIS LABORATORY. (1) Prerequisite or corequisite: IET 311. Analysis and design of work methods; principles of motion study; work measurement by direct and predetermined motion-time systems.

IET 411. PRODUCTION CONTROL SYSTEMS. (3) Principles, analysis, and design of production and inventory planning and control. Demand forecasting, production scheduling and control systems and introduction to CPM.

IET 412. QUALITY CONTROL. (3) Prerequisite: MAT 122. The theory and application of inspection sampling plans and control charts for the design, specification, and control of product quality.

IET 421. PLANT LAYOUT. (3) Prerequisite: IET 311. Designing a plant or office with respect to material handling, machine location, auxiliary services, capital requirements, safety, and personnel organization.

IET 431. ENGINEERING ECONOMICS. (3) Principles of evaluating alternative engineering proposals. Economic measures of effectiveness, costs and cost estimation, basic comparative models, breakeven and replacement analysis.

IET 441. OCCUPATIONAL SAFETY. (3) Causes and prevention of industrial accidents. Hazardous processes and materials. Design of accident prevention programs.

IET 442. OCCUPATIONAL HEALTH TECHNOLOGY. (3) Methodology and philosophy of evaluating and monitoring the work environment for human stresses and toxic substances which affect the health of the worker. The following topics are included: Gases, vapors, fumes and dust; radioactivity hazards; occupational diseases; thermal stress; illumination and exhaust ventilation.

IET 451. PLANT LAYOUT AND MATERIALS HANDLING LABORATORY. (1) Prerequisite or corequisite: IET 421. Analysis and design of material handling systems; specifications of system components.

IET 452. DIRECTED PROJECTS. (1) Prerequisite: senior standing. A synthesis of prior work using fundamental principles applied in a directed project. Design of production systems and subsystems.

IET 462. HUMAN FACTORS. (3) Human capabilities and limitations affecting communications and response in man-machine systems. Physiological and psychological fundamentals.

College of Human Development and Learning

Dean: Professor Chase
Distinguished Professor: Powers
Professors: Britt, Burke, Hackney, Smith
Associate Professors: Antonelli, Davis, McLeod, Mork, Pleasants, Romine, Rowland, Roberts
Assistant Professors: Armstrong, Clark, Edwards, Ford, Goodman, Holland, Hoyle, Kochendofer, Lueder, Parker, Riley, Robinson, Sadoff, Schaffer, Whaley
Instructors: Ammons, Bambach, Carter, Cole, Gwaltney, Hammond, Sapp
Lecturers: Adkins, Harold, Leopard, Mast, Montgomery, Parrish, Thompson

The Bachelor of Arts Degree with a major in Human Development and Learning is designed in response to the living/learning styles of individuals and groups, the changing needs for human services, and the changing ways of dealing with the quality of life and the environments. In the program of studies, the process of education is not seen just as preparation, but as the form of enablement available throughout the life cycle. As problems of people and human services have become increasingly important in society, a demand has developed for means of equipping people with new knowledge and providing opportunities for new experiences which can be synthesized into professional and personal life styles.

The program is designed for the preparation of early childhood and intermediate teachers, infant and child development specialists, program directors, infant and day care coordinators, human service specialists and other personnel for related helping professions. The curriculum seeks to integrate the three components of general studies, a helping specialty, and professional work in the helping processes.

Program design is directed toward the development of human potential. Emphasis is given to the development and analysis of experiences which free the capacity to learn; the teacher/learner relationship; factors of meaning, values, and self-concepts which cause behavior; and experiences which provide opportunities for person-to-person relationships. Experiences in various school-community settings provide opportunities for the development of competencies necessary for self-analysis, value judgments, choices, evaluation, and behavioral change.

The program offers unique opportunities for students of teaching and learning to participate in a continuum of experiences involving

classroom studies, experimentation, action research, functional project development, independent studies, and clinical experiences. Emphasis is given to the design of personal programs of study, to the organization of experiences for individuals with genuine personal interests or needs, and to programs for groups and school faculties with interests and problems.

The development of programs of study and activities of the College of Human Development and Learning as translated into person-to-person relationships, teacher/learner relationships, and services to the University and society, represents commitment to beliefs that professional undergraduate and graduate experiences designed for teachers and other personnel for the helping professions should give priority to:

1. The cognitive and affective understanding of human potentialities and the release of human potential toward continuous growth and development of personhood;

2. The experiences which insure that the teacher and other personnel in the helping professions are liberally educated and possess some intellectual depth and competencies in selected teaching fields and related disciplines;

3. The identification of one's beliefs, prejudices, elements of relationships, and behavior.

4. The analysis of teaching/learning and other helping relationships which identify values, meanings, and the behaviors influencing self-concepts;

5. The development of moral judgment through the establishing of personhood as a fully-functioning self in relation to humanity;

6. The expansion of the field of awareness to the end that a more nearly complete complex of multidimensional relationships may be established between the learner and one's perceptions, one's behavior, the structures of knowledge, and the reification of theory into practice;

7. The integration of knowledge to promote the expanding of perception and the relating of ideas to elements of the present, the future, and the past; and

8. Experiences which provide involvement in the development of competencies necessary for self-analysis, value judgments and choices, evaluation and behavioral change through clinical learning and the use of multi-forces in the solution of problems.

With commitment to the above beliefs, and in the move from theory into practice, six fundamental factors become the focal points in designing and evaluating learning styles: (1) The Person; (2) The Environment; (3) The Integration and Relationships; (4) The Consequences; (5) The Person's Perception; and (6) The Person's Behavior.

The student who satisfactorily completes the program will have acquired at least 10 competencies; this student will be:

1. A person who demonstrates a commitment to caring attitudes in relation to human growth, development, and learning;

2. A person who has advanced in the process of becoming a self-learner; that is, one who is capable of self-initiated learning which includes the integration of learning about one's self;

3. A person who has internalized the liberating concepts from the various disciplines of the humanities, the creative arts, the natural sciences and mathematics, and the social sciences;

4. A person who has developed a special competency or competencies in some field(s) or activity that one wishes to share with another;

5. A person who demonstrates an understanding and appreciation of integrated knowledge; who sees relationships, integrates, differentiates, and blends and fuses experience with a tone and spirit of unity;

6. A person who demonstrates attitudes and skills for entering into a living/learning relationship within a wide range of diversity;

7. A person who demonstrates the ability to design and utilize creative environments for learning;

8. A person who has appreciation and knowledge of contemporary thought, research, and methods of study in human development and learning;

9. A person who feels and understands the integral relationship between living/learning, one's role as a facilitator, and the interdependence between people, cultures, communities and societal institutions; a person who perceives the interrelationships; and

10. A person who grasps and copes with reality as subjective discovery; one who sees the projection from past and present into the future as relevant in the continuing development and alteration of individual life-styles.

The completion of the development of the above competencies cannot accurately be measured by semester hours alone. Typically the student is expected to spend a minimum of eight semesters completing the program. College credits earned and competencies developed before entering the program will be evaluated and may be applied toward program requirements; while the typical student may complete the program in eight semesters, others may require a longer time.

Within the framework of these desired competencies, program priorities are as follows:

Priority 1. A graduate and undergraduate degree program of studies which integrates various related disciplines and schools of thought into a framework which truly facilitates understanding and appreciation of human potential; one which gives emphasis to the development of self-directed learning in relation to needs, performance, and continuous self-evaluation.

Priority 2. Individualized, open-curriculum programs in relation to individual strengths, weaknesses, interests, and continued growth as guided by a committee of faculty and peers representing several disciplines or content areas.

Priority 3. Experiential learning integrated and directed toward the study of people, environments, growth and development, and appreciation of the richness of human experience.

Priority 4. A program developed around and including several options for the student, selection of which will be based upon individual readiness, interests, and needs.

Experiential Learning

Experiential learning is basic to the development of the above competencies. Experiential learning provides opportunity to use actual experiences for the student to pursue as a motivating force for deepened study. The student thereby becomes familiar with concepts personally experienced through role identification, reality testing, awareness of people and their various levels of relationships, behavior analysis and the consequences implied in decision making procedures. Experiential learning is "open" in that it calls for choices, selections, self-screening, and involvement with self-analysis and team participation.

The program of clinical experiences and internships (HDL 350, 470A, 470B, and 470C) is designed so that experiental learnings will begin just as early as the program of intellectual analysis, and should proceed alongside it, step by step. As students are reading and writing about human experiences in English, history, or the social sciences; or, as mathematical, psychological and biological concepts are examined in the university classroom, students are also experiencing first-hand observations, involvements, and consequences of working with children, adults, and institutional systems in a variety of environments. Experiences should move naturally into the next step of intellectualization and the next PHASE experience. *The following criteria describe what has been termed experience and are guidelines for designing internships and clinical experiences.*

1. Experiences have an exploratory quality, flowing into the whole school-learning environment and interrelating with personal

situations, life-styles, choices, and with various elements of the larger community.

2. Experiences seek an inward quality which facilitates the process of seeing oneself more clearly as a person, as a student, and as a teacher in a relationship.

3. The closely integrated, intellectual and emotional aspects of each phase of learning for each individual student must be appropriately assessed with that individual if experiences are to facilitate a self-screening and self-revealing quality. Human beings look at themselves with clear objectivity only if they can afford to do so. When stresses grow too great or when challenges and involvement grow too light—as they often do, both in teaching area courses and in professional experiences—people close down their perceptions, distort the fields of perception, and see what they need to see.

4. The proper role of early experiences is to help the student see reality, to realize that he or she is dealing with it, to identify problems, to discover possibilities, and to become more comfortable in relationships with people and institutions. Even more fundamentally, the experiences are designed to assist the learner in assessing strengths, weaknesses, and the student's needs—room and motivation to grope and to blunder.The student needs to make choices about behavior and solutions, to feel the consequences of choices, and to gain skill and confidence in planning new courses of action. Of primary importance, however, the student must begin to grow and to develop feelings about the kind of person, the student, and the teacher he or she wants to be. The student must slowly form personal commitments.

5. Experiences in clinical settings and seminars, or in classrooms and lecture halls, must be broad and varied so as to bring the student into contact with a great variety of potential models. All models should be open to inquiry from which more autonomous learning may be facilitated. Diagnostic experiences should encourage continuous evaluation, technical and personal input, and discovery with the freedom of application, reevaluation, and new applications. No student should be "stuck" with one model, one teacher, one cooperating school or agency once further growth is blocked. Students need desperately to learn that they, as unique persons, have their own peculiar mix of strengths, talents, needs, and weaknesses, and that their potential is truly unlimited and need not be like that of any other.

Teaching/Learning Teams for Sequential Development

At the time of admission and during the first seminar, Processes of Growing I (HDL 250), each student is assigned to a team, Task Force, created to operate as a teacher/learner relationship. Each Task Force consists of 10 to 12 faculty members and an appropriate number of students. Student members will be assigned so that each

team is composed of undergraduates and graduates representing the various class distributions and areas of interest. Included among these responsibilities are:

1. Insuring coordination, integration, and group program planning;

2. Forming the structural group for Processes of Growing Seminars;

3. Facilitating the utilization and integration of students with various interests and competencies in cooperative approaches to solving problems;

4. Encouraging peer teaching/learning in the processes of planning, directing projects, and evaluating;

5. Providing an organizational structure of one or more teams for clinical experiences, internships, project design and development as related to other courses and seminars;

6. Providing an organizational structure for the collection and evaluation of evidences related to the extent to which competencies are identified and evaluated for each individual;

7. Creating environments, centers, "Settings" for internships, in-school undergraduate and graduate studies organized around real problems and needs for educational change, problem solving in real environments, and special individual study and research;

8. Providing interdisciplinary talents to the solution of problems found in the environments and, therefore, demonstrating a process;

9. Stimulating cooperative planning between the college and leaders in environments; and

10. Assisting in program development, decision-making, and administrative duties of the college.

Admission

Students are admitted to the College of Human Development and Learning through general admission to the University. The College thus becomes the professional home for students who express interest in Human Development and Learning as an area of study for prospective teachers, social service personnel, recreational specialists, guidance personnel, and for other specialists in the helping professions as the areas develop. Due to the sequential and developmental nature of the program, it is desirable that the student apply for admission as a major in Human Development and Learning as a freshman or as early in one's University career as possible.

Students admitted to other colleges of the University may complete a planned program of studies in the College of Human Development and Learning designed for interdisciplinary interests, for exploration and general interest, for intermediate or secondary certification, or as a double major program as determined by the student and the home college. It is the desire of the College of Human Development and Learning to design programs which will be highly relevant to students of business, of the arts, and of the sciences.

Specific requirements for admission are:

1. Eligibility for admission to the University;

2. Promise and readiness for experiential learning, involvement, and working with others as expressed by interest, psychological readiness, and skills of communication;

3. Readiness for, and interest in, the helping professions as expressed in experiential background and other involvements; and

4. Readiness for, and interest in, the development of a teaching/learning or helping specialization as evidenced in programs and/or experience which insure that the student will become more liberally educated and will develop some intellectual depth and competencies in selected teaching fields and related disciplines.

Residence

The undergraduate student admitted as a junior or a transfer student will plan to spend a *minimum* of two years in the program from the time the student is accepted as a major in Human Development and Learning.

Transfers

Undergraduate transfers will be considered in the same manner as other undergraduate degree candidates. Human Development and Learning advisers will be responsible for planning in consultation with the student and, if necessary, the former institution, a program which will take into account previously completed studies related to the degree sought.

North Carolina Teacher Certification

North Carolina currently provides for three types of certification based upon the completion of approved bachelor degree programs judged on the depth and breadth of one's academic preparation and the content and experiences of the professional component of preparation. These certificates are Early Childhood (Kindergarten through Third Grade), Intermediate (grades four through nine) and Secondary (grades seven through 12). Within the University of North Carolina at Charlotte, students electing Early Childhood certifica-

tion will be Human Development and Learning majors; those who elect Secondary certification will major in academic disciplines within the appropriate college; and Intermediate certificate aspirants may elect to major in either Human Development and Learning or the teaching field depending upon the individual's interests and needs.

Graduates Seeking Certification

Special students admitted to the University for teacher certification purposes will be enrolled in the Processes of Growing Seminars and other seminars in the same manner as regular undergraduate students. Specific seminars and courses necessary will be determined by a Human Development and Learning adviser through comparison of the student's prior preparation with the guidelines of the University's approved program in teacher education. The adviser will then plan a program with the student and file a copy of the approved plan with the State Department of Public Instruction. A minimum of one (1) year of full-time study will be required of such applicants.

Admission to Internships

Applications for admission to HDL 470A or 470B (Internship) must be filed with the College of Human Development and Learning by April 15 for the following fall semester and October 15 for the following spring semester. For admission to HDL 470A or 470B, candidates must be admitted to the Teacher Education program, have a grade point average of at least 2.5 in course work completed in the teaching content area, sound mental and physical health, good speech, the approval of the College and the recommendation of the major department.

Teacher Placement

The Placement Office in the Division of Student Affairs, in cooperation with the College of Human Development and Learning, provides placement services for qualified graduates. All students in the Human Development and Learning program are urged to complete their credentials since most school systems request candidates who are applying for positions to submit them. In addition, school administrators may contact the University for prospective candidates who are registered with the Placement Office.

Curriculum Materials Center

Located in the Dalton Tower, the Curriculum Materials Center contains current textbooks and related curriculum materials representing all subject areas and grade levels taught in the public schools. The center receives approximately 60 education and related periodicals. A vertical file containing non-catalogued education materials is an integral part of the center. The library is a government document depository; thus, federal government publications pertaining to education are available.

Psychological Testing Laboratory

The Psychology Department maintains a psychological testing laboratory in which students gain experience in the selection, administration and evaluation of psychological and achievement tests. A library of literature on test instruments for student use is kept current.

Learning Resources Center

As part of the College of Human Development and Learning, the Learning Resources Center provides all students laboratory experiences in teaching learning resources. The latest audiovisual equipment and teaching media will be available for individual student familiarization. Instruction in the use, preparation and evaluation of teaching media as a functional aspect of teaching will be included.

Achievement Options

The final responsibility of providing evidences of the extent to which the desired competencies are developed, as with the responsibility of all learning, is the personal responsibility of each student. By utilizing, with the support and guidance of faculty advisers and peers, a variety of University resources, each student is aided in selecting various options for the achievement of goals and as support evidences for the completion of the program.

Each student shall be expected to identify specific competencies and personal behavioral objectives within the framework of the desired program competencies listed on page 154. This process shall be a major purpose of the student's first semester, The Process of Growing: I, (HDL 250).

The student may select a combination of options for the completion of various program requirements. One program requirement may be completed by one option, while another option may be selected for another requirement depending upon student needs, interests, and the availability of appropriate resources. The following options are provided within the organizational structure of the program:

Option I. Successful completion of approved courses offered within appropriate departments of the University will be recognized as evidence of the attainment of specific competencies.

Option II. Successful completion of an examination to challenge the content of specific courses identified in Option I will satisfy the competencies specific to these courses.

Option III. Students who feel that certain prior experiences have led to the achievement of particular competencies may devise, in consultation with their adviser in the College

of Human Development and Learning and a faculty member from the department appropriate to the competency, a way to demonstrate individual competencies. If the plan is approved and successfully carried through, the competency will be considered satisfied and so recorded in the student's record.

Option IV. Students, individually or in groups, may seek, in consultation with faculty from the College of Human Development and Learning and the appropriate departments, to satisfy particular competencies through means not provided for above such as independent study, project development, group seminars, and other student designed activities for learning. Such plans, when approved by appropriate faculty in both departments and successfully completed, will satisfy the particular requirements.

Student Review and Evaluation

The model of evaluation utilized in a program of this nature must encompass all of the factors deemed important in the functioning of the individual. The following areas are considered the essential ones, at a minimum level, for those engaged in the helping professions:

1. Academic achievement including the application of appropriate learning in a practical setting;

2. The professional helper's attitude in relation to self, others, learning and the role of service in society;

3. Personal and social development in relation to self and others; and

4. Professional performance demonstrated in a healthy learning environment.

The designed program is competency based. As such, its emphasis is on the individual's ability to demonstrate that one has acquired certain knowledge and skills and is able to apply them in a "real" setting. The function of the University faculty in such a program is to assist the individual student in the student's process of identifying relevant skills, demonstrating those in which one is aleady proficient, and selecting or designing learning experiences to acquire those in which one is not proficient. Rather than functioning judgmentally, the faculty should provide constant feedback to each student to facilitate self-evaluation.

One of the major roles of the Processes of Growing Seminars is to acquaint the student with the compentencies which are sought and then to assist the student in designing a plan for demonstrating one's mastery of the appropriate skills and knowledge. Possible sources of data include various methods of standardized testing, audio and video tapes, films, photographs, papers and research studies, and

other media deemed appropriate to the development of a professional portfolio. As a result, final recommendation for certification will be made by appropriate University officials.

Each student's progress will be reviewed each semester as a part of the teaming process in the various Processes of Growing Seminars. The student is responsible for developing, with one's team members and adviser, plans for demonstrating one's progress and for meeting any deficiencies or needs identified. Each seminar will be evaluated and the grade designation will be *H*, indicating honors; *P*, indicating passing; *L*, indicating low passing (minimal competence); and *N*, indicating no credit, or unsatisfactory progress.

Since the program is geared to the student's development of competencies in relation to specific needs and interests in the helping professions, students whose evaluation is unsatisfactory, *N*, on semester seminars will be encouraged to reassess their goals and whether they should continue in the program. The effort will be toward helping the student identify one's needs and weaknesses and toward helping the student determine the field and the structure in which one can function more productively rather than in simply eliminating one from the program.

Student evaluation gives emphasis to the College's obligation to provide each student with feedback to assist instructors and students in focusing on areas of particular strengths and/or weaknesses. It also takes into account the desire of graduate schools and employers to have a statement concerning individual potential, achievement, growth, and development.

Therefore, the evaluation of individual students has both a personal and a social aspect. For example, has the student reached some personal goals? Have knowledge, skills, and attitudes been extended? The social aspect is concerned with the role the student fulfills in society. These two are inseparable within the individual student.

The evaluation approach of the College of Human Development and Learning is designed to offer maximum opportunity to develop and learn by feeding-back to each individual information concerned with the quality and quantity of one's work. The performance of a quality-control of the professionals being educated and graduated is an obvious responsibility which will be met by the program. It is an inseparable part of the larger concern for the welfare, development, and learning of persons educated in the College of Human Development and Learning Program and the persons to be touched by graduates of that program.

Evaluation Check Points

There exist within the program several key points in the evaluation process. Among these are:

Admissions and Entry. The point at which base line data for each student with respect to each of the three components must be col-

lected. This data serves as a beginning for program planning and evaluation in HDL 250;

Phase I, II, III, and IV. The student must demonstrate the satisfactory completion of each of the four Phase Sequences. Through the use of examinations, projects, papers, or other means designed by the student and the adviser, an evaluation of each phase will be recorded. Phase I and II must be satisfactorily completed before registering for Processes of Growing VI (HDL 470A).

Internship. During the semester prior to Processes of Growing VI Seminar, the internship must be planned and approved. An assessment and judgment will be made with respect to the student's growth and readiness to undertake the extensive, largely self-directed field experience with a prognosis of success; and

Exit. During the final semester evaluation of present development with respect to base line data, success in the total program and the meeting of the standards for the awarding of the degree.

Grading Symbols

1. *Honors (H)* symbolizes that the student has demonstrated clear excellence in meeting the requirements of all three components in the learning process.

2. *Passing (P)* symbolizes that the student has satisfactorily met the requirements of all three components in the learning process.

3. *Low Passing (L)* symbolizes that the student has demonstrated minimal competence in one or more of the three components in the learning process.

4. *No Credit (N)* symbolizes that the student has not met satisfactorily all the component requirements.

5. *Incomplete (I)* symbolizes that a student has not completed work in components of the learning process, but otherwise is progressing satisfactorily. The appropriate form stating the specific deficiency and what is required to remove it must be completed by the instructor and filed in the student's portfolio in order to assign the grade of *I*. The deficiencies must be removed in accordance with the time limits prescribed by the University or the grade will be changed to *N*.

6. *Withdraw (W)* indicates the student withdrew from the course under existing University policy.

To receive credit in a seminar for which a *No Credit (N)* has been received, the student must re-register for and satisfactorily complete the seminar.

Completion of Degree

Since the student's total program consists of course work in other colleges of the University as well as work in Human Development and Learning, the following minimum standards for the awarding of a degree are established:

1. A grade of *H, P,* or *L* in all required Human Development and Learning seminars;

2. Satisfactory completion and evaluation of each Phase Sequence;

3. A grade of *H, P,* or *L* in Internships;

4. A grade point average of 2.5 or above in all courses in the areas of Related Concentration;

5. An overall grade point average of 2.0 or above on all University course work for which grade points are awarded; and

6. Recommendation of principal professor, one other professor in Human Development and Learning, and by one other person supervising the internship, after appraisal of portfolio, performance and other evidence of competencies developed.

PROGRAM SEQUENCE

As students are admitted, courses and experiences planned, and programs for individuals are developed, emphasis is given to individual strengths and weaknesses, and the goal is to design specific programs for individuals. Contact with several teachers and with various teaching styles is stressed. Full recognition is given to the value and worth of many kinds of school and learning experiences in addition to the classroom. Every effort is made to bring practicing teachers, members of the helping professions, professional students, members of the community, and the University into true partnership.

The professional sequence for undergraduate and graduate studies in the College of Human Development and Learning is presented as PHASES which may be conceptualized as an evolving continuous spiral, as a series of experiences, integrating Exploration, Involvement, Commitment, and Universality. Therefore, all courses, seminars, and clinical experiences are organized around these four PHASES. Each student must satisfactorily complete a sequence of studies in each PHASE. Evaluation examinations are administered upon the completion of studies in each PHASE.

PHASE I: *EXPLORATIONS IN HUMAN POTENTIAL*

The first phase of the integrated program of professional study focuses upon the nature, potential, and worth of the person. Emphasis is given to life patterns, creative potential, social forces and human

potential, and to the image of the person as becoming. During this PHASE, studies focus upon the person in urban society, the facilitation of meaning, and upon those factors and conditions which facilitate or hinder the growth of human potential. General studies of inquiry into the human sciences, the social sciences, health and movement, and language and communication provide foundational studies for exploration into human potential and for further study. Students will be concerned with an in-depth analysis of their beliefs, values, and their personal relationships in relation to a growth environment. Opportunities are provided for the student to be engaged in clinical experiences that will promote understanding of the sociological, psychological, and philosophical foundations on which educational experiences are selected and organized.

Requirements for the completion of PHASE I are as follows:

I. *General Studies*

Operating from the assumption that the holder of a degree in Human Development and Learning is first a person knowledgeable in several areas of human endeavor, the general studies are conceived as the minimum competencies necessary for further understanding of the developmental aspects of human potential. As a minimum, general studies serve to acquaint the student with concepts and understandings in the major areas of knowledge. This will be the individual's last formal encounter with some areas while with other areas these experiences will be the base for concentration of study and for lifelong growth. Minimum achievements to be accomplished are:

a. The ability to communicate effectively orally and in writing;

b. An understanding of the skills involved in a non-verbal language communication;

c. A sensitive understanding of creative expressions in the arts, music, philosophy and literature;

d. Knowledge of and appreciation for cultural development as expressed in social structures;

e. Knowledge of and appreciation for scientific development with particular emphasis on human growth and the relatedness of the field of science;

f. An understanding of systematized ways of thinking and problem solving as exemplified in the areas of mathematics and logic;

g. Understanding of fundamental aspects of mental and physical growth and development; and

h. Increased self-awareness and self-acceptance.

Evidences of the above competencies may or may not be measured by semester hours or the completion of courses. The satisfactory completion of selected courses when pursued with purposes and goals related to individual needs generated from the above competencies may yield satisfactory evidence. A planned program, therefore, should include studies in various disciplines which reflect balance, breadth, and basic skills and knowledge as general or liberal studies When translated into a conventional program of existing courses and semester hours as a guide to studies, the following program meets existing University general degree requirements and serves as an example for minimum development:

English and Language Development	6 semester hours
Biology and Human Genetics	7 semester hours
Social Sciences	12 semester hours
Creative Arts and Humanities	6 semester hours
Health and Physical Education	6 semester hours
Logic and Mathematics	6 semester hours

II. *Helping Processes*

HDL 250, 400A, 350A, 400B or equivalents as approved by faculty committee.

III. *PHASE I Evaluation Examination*

PHASE I examination may be taken after the satisfactory completion of HDL 250; 400A, B; HDL 350A, HED 409, HED 300; and, at least 18 hours of the general studies requirements; or equivalents as approved by faculty committee. Typically, this examination is taken after the completion of the first two semesters.

PHASE II: *MEANING AND GROWTH IN TEACHER/LEARNER RELATIONSHIPS*

PHASE II in the integrated program of professional study seeks to extend and deepen the interest and understandings explored in PHASE I by a continuing inquiry of general studies in the arts and sciences, and through the beginning study for the development of specialties. During this PHASE, the student considers particularly the special problems attendant to the release of human potential through participation in a particular interpersonal relationship—that of teacher and learner. Emphasis is given to living/learning styles and environments in relation to growth and developmental patterns.

As part of the work in this PHASE, educational experiences are selected and organized on the bases of the social, psychological, and philosophical tenets examined in Phase I. The outcomes of these

decisions having been used as a point of departure, the problems of design and implementation of living/learning styles at all levels are considered. In the undergraduate program, emphasis is upon processes of growth as it concerns the individual teacher/learner, while at the graduate level, the emphasis is extended to include a broader scope of teacher/learner relationships and multi-dimensional approaches to concepts of teaching, perception, learning, growth and behavior.

Requirements for the completion of PHASE II are as follows:

I. *Helping Processes*

HDL 400C,D; HDL 350B,C,D; and HDL 420A,B; or equivalents as approved by faculty committee.

II. *PHASE II Evaluation Examination*

PHASE II examination may be taken after the satisfactory completion of all general studies requirements and HDL 400 C, D; 420 A, B; and 350 B, C, D; or, equivalents as approved by faculty committee. *This examination must be completed before* beginning HDL 470A-Internship.

PHASE III: *THE HELPING RELATIONSHIP*

PHASE III seeks to focus upon the helping relationship a relationship in which at least one of the persons has the intent of promoting the growth, development, and maturity of the other, whether this be in a group or in a one-to-one setting. Teaching, guidance and counseling, administration, and the supervision of instruction are considered helping relationships, for each is organized to facilitate the growth of another. Work in this PHASE concentrates on the relationship of theory to practice and the development of appropriate skills.

Special emphasis is given to the further development of areas of concentration as helping specialties and to the examination of basic beliefs, the techniques and analysis of helping relationships, and to the identification of values, meanings, and self-concepts which cause behavior. This PHASE assists the participant in an in-depth study of the processes of growing and theories of human development in relation to the various levels and cycles of growth.

Requirements for the completion of PHASE III are:

I. *Helping Specialty*

Fundamental to serving as a facilitator of human growth is the attainment of depth and breadth in some areas of systematized knowledge in which the helper seeks to operate. The major purpose of this area of study is to develop a special competency or competencies in some field(s) or activity that the student wishes to share with another.

Minimum achievements to be accomplished are:

a. To demonstrate an understanding of the major skills and content concerns of the selected area of discipline;

b. To demonstrate an understanding of the methods of inquiry of the selected area of discipline;

c. To interrelate knowledge of the selected area of discipline into other areas of human experience and illustrate the effect and role of the discipline in an interdisciplinary world; and

d. To demonstrate the value of knowledge through application, noting the variety and utility of disciplinary application.

The student shall select one helping specialty of area of concentration from the following:

1. *Creative Arts.* A program of studies designed to allow the student to explore facets of the arts in relation to interests and talents. The student is encouraged to explore several aspects of creativity, the arts and their relationship to human development; skill development, materials, and production in relation to analysis of form, expression, and structure. Seminar, workshop, and project offerings shall be selected in consultation with a principal professor of Creative Arts. A concentration in Creative Arts shall require a minimum of at least one to two full semesters of study or the equivalent.

2. *Cultural Studies.* A program of studies designed to allow the student to pursue in-depth the history, literature, music, and geography in relation to political and cultural heritage and structures. The student, in consultation with faculty advisers, shall identify thematic ideas such as "diverse political systems," "societal adjustments," or others of interest around which a program of studies may be designed equivalent to 18-24 semester hours. Regional studies may also serve as an area around which the program may be developed.

3. *Human Sciences.* A program of studies equivalent to a minimum of 18-24 semester hours designed to develop skill in and appreciation of scientific inquiry, the understanding of basic life processes, and the chemical and physical constitution of living matter.

4. *Language Development and Communications.* An integrated program of studies designed to develop an understanding of concepts of speech, dialects, patterns of language development and forms of communication (verbal and non-verbal) in relation to the processes of socialization, historical and literary style, and structure. The area of concentration is designed to allow the student to develop talents and interests in language and communication skills in relation to interpersonal dialogue, the release of human potential, and the diversity of cultural heritage, attitudes, and values.

5. *Movement Education.* An area of study designed to allow the student to develop an understanding and appreciation of movement as a medium for improving and maintaining functional health and as an approach for releasing human potential. The student is provided the opportunity to develop an individualized approach to helping others learn to become aware of their physical abilities and to use them effectively in their daily activities of play, work, learning skills, and creative expression.

6. *Psychological Studies.* A program of studies designed to allow the student to pursue in depth various areas of exceptionality, emotional disturbances, psychological development, and testing.

7. *A Specific Discipline or Other Thematic Idea.* The student may select an area of study of major interest from one discipline or department such as English, History, Mathematics, or other approved programs.

As with General Studies, the development of a Helping Specialty is not a mere completion of an isolated list of courses or a number of semester hours. The program of studies should be planned in relation to stated competencies, identified needs, and goals of the student to insure the development of a concentration with some relatedness and depth as a specialty. As a guide to program planning, this component of the program should constitute at least 18-24 semester hours or the equivalent when measured in conventional terms.

II. *The Helping Processes*

HDL 470A or equivalent as approved by faculty committee.

III. *PHASE III Evaluation Examination*

PHASE III examination may be taken near or after the completion of HDL 470A, and after the completion of 12-15 hours of the Helping Specialty. The Examination is cumulative in nature, growing from Phases I, II, and III. It is not the internship alone.

PHASE IV: *Experience and Commitment in Human Development and Learning*

PHASE IV in the integrated program of professional study seeks to extend and deepen through experience and commitment, the interests and understandings developed during PHASES I, II, and III. During this PHASE, the student considers particularly the special problems attendant to the release of human potential through participation and experience in a clinical setting involving the interpersonal relationship of teacher/learner as experienced in teaching, counseling, administration, supervision, and other helping relationships.

In this PHASE, participants implement the social, psychological, and philosophical bases concerning teaching/learning relationships in a clinical internship setting appropriate to their choices and pro-

fessional commitments. Experiences will provide the participant an opportunity for the exercise of concern and commitment in realistically releasing human potential while actively working with human beings.

Requirements for the completion of PHASE IV are:

I. *Electives for Needs and Interest*

Opportunities and time within the program permit and encourage the student to explore courses and other experiences which are designed to develop specific needs and interests. These areas of study may be used to develop new competencies in fields other than the Helping Specialty or area of concentration, or this area may be used to strengthen or broaden the student's chosen specialty.

II. *The Helping Processes*

HDL 470B, 470C, 400E, 420C,D,E,F, or G; or, equivalents as approved by faculty committee.

III. *PHASE IV Evaluation Examination*

PHASE IV examination may be taken after the completion of HDL 470B and during the last semester of registration before graduation. The Examination is cumulative in nature, growing from Phase I, II, III, and IV. It is developed as a part of HDL 470C.

A Sample Program by Semester When Viewed as Courses

First Semester		*Second Semester*	
Processes of Growing I ..	(3)	Processes of Growing II	
Biology	(4)	Communication	
Health or P.E.	(3)	Processes & Skills	(2)
English	(3)	English	(3)
Sociology or		Genetics	(3)
Anthropology	(3)	Social Sciences	(3)
		Health or P.E.	(3)
		Cultural & Scientific	
		Impact	(2)
	16		16
Third Semester		*Fourth Semester*	
Processes of Growing III	(0)	Processes of Growing IV	(0)
Seminar on the		Living/Learning Styles ..	(2)
Person A	(2)	Seminar on the	
Humanities/Creative		Person B	(2)
Arts	(6)	Logic or Mathematics ...	(3)
Logic or Mathematics ...	(3)	Helping Specialty	
Helping Speciality	(6)	and/or Elective	(6)
		Elective	(3)
	17		16

Fifth Semester

Processes of Growing V	(0)
Living/Learning Environments	(2)
Helping Specialty and/or Electives	(12-15)
	14-17

Sixth Semester

Processes of Growing VI	(9)
Electives and/or Helping Specialty	(0-6)
	9-15

Seventh Semester

Processes of Growing VII	(9)
Helping Specialty and/or Electives	(0-6)
	9-15

Eighth Semester

Processes of Growing VIII	(2)
Developmental Exceptionality	(2)
Seminar on the Person C, D, E, F, or G	(2)
Helping Specialty and/or Electives	(9)
	15

Program for Secondary Certification

Candidates who plan to teach in the secondary school will fulfill the following requirements:

1. All required courses for graduation as specified by the department of the major.

2. A major in the academic field in which they plan to teach.

3. Related work approved by the major department.

4. Professional requirements for certification as indicated below.

In order to provide an extended in-school experience concurrent with the individual's academic and professional study, *the student must make known an interest in working toward certification in sufficient time to spend at least two years in the program.* Secondary certification will be recommended, with the concurrence of the department of the major upon satisfactory completion of any existing University requirements for graduation, the requirements of the major department and college, and the following Human Development and Learning seminars:

HDL 250 Processes of Growing I: Exploration of Human Potential (3)

HDL 400 Seminars on the Person: Problem/Process (A) Communication Skill and Processes (2); (B) Cultural and Scientific Impact (2); (C) Living/Learning Styles (2); (D) Living/Learning Environments (2); and (E) Developmental Exceptionality

HDL 420 Seminars on the Person: Cycles of Growth
(A) Early and Middle Years (2); and, (D) The Middle Years (2); or, (E) The Adolescent (2).

The above eight seminars are to be taken concurrently with Clinical Experiences (HDL 350A, B, C, or D) or with:

HDL 470B Internship (9)

HDL 470C Synthesis (2)

To be admitted to the professional internship the intermediate and secondary applicant must:

1. Be recommended by the department of the major;

2. Present a grade point average of 2.5 or above in area of the major;

3. Have completed prerequisite seminars in Human Development and Learning with grades of *H*, *P*, or *L*; and

4. Present an overall grade point average of 2.0 or above in all University course work for which grade points are awarded.

COURSE DESCRIPTIONS

HUMAN DEVELOPMENT AND LEARNING

HDL 250. PROCESSES OF GROWING I: EXPLORATION OF HUMAN POTENTIAL. (3) An introduction to the study of Human Development designed to allow the individual to look closely at one's self and one's relationship to others. Includes clinical experiences which are interrelated with other aspects of the total program to provide opportunities to work with others in a helping relationship as a source of data from which to explore aspects of human potential. Emphasis will be placed on self-evaluation and upon the development of a program of studies tailored to aid the individual in reaching one's personal and professional goals. Areas of investigation shall give emphasis to the nature of human potential; the processes of meaning, valuing and choosing in relation to human interaction, and to an analysis of barriers and/or facilitators to the release of human potential.

HDL 350. PROCESSES OF GROWING: TEACHING/LEARNING TEAM.
A. Processes of Growing II (O)
B. Processes of Growing III (O)
C. Processes of Growing IV (O)
D. Processes of Growing V (O)
Seminars designed to continue the relating and integrating functions begun in Processes of Growing I. As a function to these seminars, clinical experiences will be planned and carried out to contribute to classwork in other seminars in which the student is enrolled. Semester by semester these seminars will serve as a "home base" for the

students. They will also provide a planned clinical component to complement and integrate the content of Seminars on the Person and of the various areas of the Helping Specialties in relation to competencies being identified and developed.

HDL 400. SEMINARS ON THE PERSON: PROBLEM-PROCESS

A. Communication Skill and Processes. (2) This seminar focuses on developing greater awareness within each participant of how one conveys ideas to others and how one interprets the variety of verbal and nonverbal expression from others. In the belief that many ideas are transmitted non-verbally, the seminar members will interpret facial expression and body movement as one major function of human languaging. The verbal components of communication include dialectic and cultural influences on language as well as developing listening skills for qualities in speech such as tonality, resonance, sentence patterns, word selection and silence. Emphasis is given to developmental language and reading. Techniques for the development of language and reading are introduced. The major purpose of the seminar is to help each participant to understand both the sending and receiving of human communication with greater meaning through interpreting the components of languaging within the context of the total communication effect.

B. Cultural and Scientific Impact. (2) Designed to help the student become aware of the interrelationship between the areas of the arts, sciences, humanities, and the social studies particularly as they relate to an understanding of human potential. Serves to encourage an integration of principles from the various disciplines with a focus on how they relate to living/learning. Emphasis is given to areas of investigation as structures of knowledge, interdisciplinary principles and concepts, ways of generating knowledge, technology and change, and concepts of futurism.

C. Living/Learning Styles. (2) Designed to provide the student with an opportunity to investigate the relationship between cognitive, affective and psychomotor development as they relate to living/learning styles. Emphasis is on the process of learning in each of the three areas in relation to intellectual growth, the valuing process, the individual and exceptionality, and to multi-directional interaction and learning.

D. Living/Learning Environments. (2) Designed to provide the student with an opportunity to be involved in decision-making and decision-executing experiences which focus on the interrelationship of Living/Learning Styles and the environment in which individuals find themselves. Emphasis is given to areas of investigation such as the scope of the environment, designs and models, alternative systems, learning centers, and resources.

E. Developmental Exceptionality. (2) Designed to survey the field of human exceptionality. Emphasis is on both the exceptionally talented and the individual with developmental disabilities.

HDL 420. SEMINARS ON THE PERSON: CYCLES OF GROWTH

A. Early and Middle Years (2)
B. Adolescents and Aging (2)
C. The Infant and Early Years (2)
D. The Middle Years (2)
E. The Adolescent (2)
F. The Young Adult (2)
G. The Adult Years (2)
Seminars to provide the student with an awareness of total growth and development as the cycles of human growth are studied from the earliest days of infancy to the culmination of life in old age and death. Emphasis is given to biological and cultural inheritance, growth patterns, socialization, growth crises, life styles, identity and roles, and to methods of in-depth study in relation to learning and growth environments.

HDL 463. GUIDANCE BEHAVIOR AND GROWTH. (3) An introduction to the study of guidance in the context of the helping relationship. Emphasis is given to the development of understandings, approaches and techniques for helping others make decisions directed toward the solution of problems and the facilitation for self-understanding and growth. Open to students not seeking teacher certification.

HDL 470. PROCESSES OF GROWING: INTERNSHIP, INTEGRATION, AND SYNTHESIS
A. Processes of Growing VI—Internship (9)
B. Processes of Growing VII— Internship (9)
C. Processes of Growing VIII—Integration and Synthesis (2)
These seminars are designed to provide the student with an opportunity to pursue an individually planned program of experiential learning activities in the areas of one's particular interest and academic concentration, to promote the growth and development of others under the supervision and coordination of University faculty members. Processes of Growing VI, VII, and VIII are designed as culminating and synthesizing functions. The seminars, offered during the student's last three semesters, are intended to integrate the student into greater roles of responsibility involving action, research, and demonstration of developed competencies. The seminars require prior planning by the student or teams of students for the development of a program of study, research, and demonstration projects of experiential learning in relation to the helping processes and the chosen areas of the helping specialty. A final seminar, to include a seminar report and a portfolio of the total experience, is required. The process brings the student into greater roles of responsibility, not only with people outside the University community but also within the Process of Growing team itself. The student and his or her advisers plan during the fifth semester of study for Processes of Growing Seminars VI, VII, and VIII. Within the typical program the student should register for Processes of Growing VI and VII during the sixth and seventh semester of study. Processes of Growing VIII is undertaken during the final or eighth semester during which time the student engages in the processes and functions of synthesis,

theory refinement, and evaluation in relation to both the *Helping Processes* and the *Helping Specialties.*

Courses for Advanced Undergraduates

HDL 570. SELECTED TOPICS IN HUMAN DEVELOPMENT AND LEARNING. (3-6) Prerequisite: HDL 250 and permission of the College of Human Development and Learning. Topics and special problems chosen in relation to human learning, ideas, practices, significant movements or detailed study of models for human learning. Seminars, independent study and clinical experiences. May be repeated for credit, with approval.

Library Science

L.S. 520. ORGANIZATION AND ADMINISTRATION OF THE SCHOOL MEDIA CENTER. (3) Acquisition, processing, circulation of materials; student assistant; records and reports; attendance and scheduling; library quarters and equipment; professional relationships, evaluation of library services.

L.S. 522. BASIC REFERENCE SOURCES AND MATERIALS. (3) The selection, evaluation and use of basic reference materials.

L.S. 524. READING GUIDANCE AND THE SELECTION OF BOOKS AND MATERIALS FOR CHILDREN. (3) A survey of the development of children's literature, with study of aids and criteria for selection of books and other materials; principles and objectives of reading guidance for the kindergarten and elementary school pupil.

L.S. 526. READING GUIDANCE AND THE SELECTION OF BOOKS AND RELATED MATERIAL FOR YOUNG PEOPLE. (3) A survey of library materials and principles and objectives of reading guidance appropriate for the junior high and high school student, with study of aids and criteria for their selection.

L.S. 528. NON—BOOK MATERIALS. (3) A study of the principles and techniques for the selection, acquisition, organization, circulation and use of non-book materials in the library program.

DEPARTMENT OF HEALTH AND PHYSICAL EDUCATION

Chairman: Professor Murphy
Associate Professors: Bostian, Healey, Tillotson
Assistant Professors: Dawson
Lecturers: Bass, Gardner, Hastings, Kerr, Merrell, Pratt, Rose, Wilhite, Wilkins

COURSE DESCRIPTIONS

Health Education

HED 300. FUNCTIONAL HEALTH DYNAMICS. (3) The dynamics of the science and teaching of functional health. Three lecture-laboratory hours each week.

Physical Education

PED 101. FOUNDATIONS OF PHYSICAL CONDITIONING. (1) The application of various physical training programs designed to improve and maintain physical fitness. One-sixth of the meetings will be devoted to lectures on physiological and psychological aspects of physical training. Three one-hour meetings a week.

PED 102. WEIGHT TRAINING. (1) The basic mechanics of weight training. Emphasis on anatomy, tests and measurements, individual strength development and isometric training. Three laboratory hours each week.

PED 103. FENCING. (1) The skills and rules of the sport of fencing. Three hours each week.

PED 106. ADAPTIVE AND DEVELOPMENT PHYSICAL EDUCATION. (1) Prerequisite: permission of the instructor. Prescribed ameliorative exercises adapted to individual needs, capacities and interests. Primarily designed for the individual with anatomical and functional defects.

PED 110. BEGINNING SWIMMING. (1) Designed to teach weak or nonswimmers a basic stroke and safe entry into and exit from the water. Three laboratory hours each week.

PED 111. INTERMEDIATE SWIMMING. (1) Prerequisite: PED 110 or permission of instructor. Emphasis on gaining competency in at least four basic strokes and two dives. Three laboratory hours each week.

PED 115. WATER SPORTS. (1) Rules and skills of water polo and water basketball. Three laboratory hours each week.

PED 120. BEGINNING TENNIS. (1) The rules, history, basic skills and basic strategy. Three laboratory hours each week.

PED 123. BEGINNING BADMINTON. (1) The rules, history, basic skills and basic strategy. Three laboratory hours each week.

PED 125. BEGINNING HANDBALL. (1) The rules, history, basic skills and basic strategy. Three laboratory hours each week.

PED 140. BEGINNING GOLF. (1) The grip, stance, stroke, use and selection of clubs, history, rules and etiquette. Three laboratory hours each week.

PED 142. ARCHERY. (1) The fundamental skills and selection, care and repair of equipment. Three laboratory hours each week.

PED 150. VOLLEYBALL. (1) The rules, history, etiquette, correct method of serving, passing, setting up, spiking and blocking the ball, offensive and defensive team play and officiating are emphasized. Three laboratory hours each week.

PED 160. GYMNASTICS. (1) Single and combinations of stunts on the side horse, horizontal bar, parallel bars, uneven parallel bars, still rings, balance beam, trampoline and tumbling mats are taught. Emphasis is placed on fundamentals so the student can exercise creativity in constructing routines. Three laboratory hours each week.

PED 212. ADVANCED LIFESAVING. (2) Prerequisite: PED 111 or instructor's permission. The science and skills associated with lifesaving. The course qualifies the student for the American Red Cross Senior Lifesaving Certificate. One hour lecture and two hours laboratory each week.

PED 213. WATER SAFETY INSTRUCTION. (3) Successful completion of PED 212 or current American Red Cross Advanced Lifesaving Certification. The study of the techniques used in teaching people aquatic skills. Emphasis is placed on beginning swimming, swimming stroke technique and lifesaving techniques. Qualifies the student for the American Red Cross Water Safety Instructor's rating. Two hours lecture, two hours laboratory each week.

PED 219. SCUBA DIVING. (3) Prerequisite: current American Red Cross Advanced Lifesaving Card or equivalent. Advanced swimming skills including: breast stroke, American crawl stroke, side stroke, swim underwater 25 yards, swim continuously for 20 minutes, tread water 10 minutes, tread water with hands out of water 5 minutes, and swim 50 yards with 10 lb. weight belt, or instructor's permission. The science and skills associated with the use of self-contained underwater breathing apparatus. The course qualifies the student for the National Association of Underwater Instructor's (NAUI) basic SCUBA Diving Certification. Equipment furnished except wet suits. Two hours lecture, two hours laboratory each week and two open water diving field trips.

PED 409. PHYSICAL EDUCATION LABORATORY. (3) Physical education instruction, principles of physical education teaching for the elementary grades.

PED 504. PERCEPTUAL MOTOR DEVELOPMENT. (3) A study of the theories, principles and research related to perceptual-motor development of children. Designed to introduce the student to the importance of the perceptual-motor domain of human development.

PED 505. PERCEPTUAL MOTOR LEARNING. (3) Prerequisite or corequisite: PED 504 or consent of instructor. A study and analysis of perceptual-motor learning of children and its effect on school performance. Includes the study of perceptual-motor learning theories, diagnostic techniques and selection and analysis of appropriate perceptual-motor learning activities. Special emphasis will be placed on perceptual-motor programs relating to reading, writing and mathematics.

PED 508. PERCEPTUAL MOTOR THERAPY. (3) Prerequisite: PED 505 or consent of instructor. The observation, evaluation and therapy for children with perceptual-motor dysfunctions. Emphasis is given to the development of understanding approaches and techniques for helping children with perceptual-motor dysfunction. May be repeated for credit with approval of instructor.

PED 510A. PERCEPTUAL MOTOR THERAPY LABORATORY. (1).

PED 510B. PERCEPTUAL MOTOR THERAPY LABORATORY. (2).

PED 510C. PERCEPTUAL MOTOR THERAPY LABORATORY. (3). Prerequisite or corequisite: PED 508 and/or consent of instructor. Supervised observation, testing and clinical teaching of children with perceptual-motor dysfunction. Course may be repeated for credit with approval of instructor. Three (3) hours is required in laboratory each week for each one (1) hour of credit.

Movement Education

MED 350. MOVEMENT EDUCATION. INTRODUCTION AND OVERVIEW. (6) An introductory course in the awareness, understanding, appreciation and study of human movement. Emphasis is given to the analysis of student's own movement behavior. Overview of movement as a means of self expression, as exercise, play, games /sports will be studied. Clinical experiences are provided to introduce students to possible helping relationship roles. Six class hours per week, in addition to clinical experiences.

MED 400. MOVEMENT EDUCATION DIRECTED ACTIVITIES. (6) Prerequisites: MED 350 or consent of instructor. An in-depth examination (theoretical and practical) of the three major activity areas necessary for understanding and appreciating human movement: a) education games, dance and gymnastics; b) perceptual motor development skills/activities; c) specific recreational indoor-outdoor activities. Six class hours per week, in addition to clinical experiences.

MED 401. MOVEMENT EDUCATION PROBLEMS. (1-6) Prerequisites: MED 350 and MED 400 or consent of instructor. An In-depth examination of movement problems: topics and special areas of interest chosen in relation to: a) teaching/learning about self and helping relationships using movement as the central focus; b) broad study of motor development and learning; c) scientific foundations of exercise, health and fitness; d) movement as therapy (improvement of self-concept and self-awareness; improvement of academic readiness; assisting with social skills). Seminars, independent study and clinical experiences will be the modes of teaching. May be repeated once for credit, with approval.

College of Humanities

Dean: Professor Mathis

The College of Humanities includes the areas of American Studies and Afro-American and African Studies and the Departments of Creative Arts, English, Foreign Languages, History, Philosophy and Religious Studies.

AFRO-AMERICAN AND AFRICAN STUDIES

Director: Assistant Professor Norman
Lecturer: Swann

The major in Afro-American and African Studies is divided into four phases which have corresponding courses applicable to each year in the undergraduate curriculum.

PHASE I. WHO AM I? The controlling objective of Phase I is to initiate awareness and exploration. This process involves both personal and intellectual growth in all areas of academic, social and communal relations with yourself and those around you. In an effort to help incoming students adjust to the diversities of the college curriculum, a series of courses has been grouped together to form the Freshman Block.

A major part of the Afro-American and African Studies Program is the Human Relations Lab at the beginning of each year. The lab, commonly referred to as "The Encounter," helps the student in his academic course of study. Through a series of three-day sessions, the student is helped to develop skills in communication, group participation, listening, setting goals and effectively pursuing them.

Fall Semester	*Spring Semester*
Black Experience 101	Black Experience 102
English 101	English 102
History 103	Electives
Sociology 151	

PHASE II. WHY AM I HERE? The controlling objective of Phase II is to deepen the self-awareness begun in Phase I and to awaken in the student an appreciation of Afro-American culture in the aesthetic and social realms. The primary courses for Phase II include:

Afro-American Culture I—a survey course which analyzes the Black experience through literature, music, drama and art.

Afro-American Culture II—a survey course which examines social, political, economic and educational institutions from the Black perspective.

PHASE III. WHERE DID I COME FROM? The controlling objective of Phase III is to develop the skills and provide the framework necessary to help the student move to a higher level of theorizing and exploration. The primary focus of Phase III includes:

Research Methods—the design of a research project from the Black perspective with emphasis on developing sound research methods.

Experiential Learning—the purpose is to draw up an hypothesis from the total learning experience in Phases II and III, which the student hopes to validate.

PHASE IV. WHERE DO I GO FROM HERE? The controlling objective of Phase IV is to provide a process through which the student can answer the question, "Where Do I Go From Here?" By means of a senior project and participation in a seminar with others engaged in research in Afro-American and African Studies, the student will attempt to appraise where he is now, given his personal and academic growth in the first three phases: The primary focus for Phase IV includes:

Participation in the Human Relations Lab
Senior Seminar
Senior Project
Certification by the Advisory Committee

From Phase I to Phase IV, the curriculum is structured to aid not only in the academic development of the student but also in the development of his entire being.

Community Projects

Involvement in the Black Community is essential in all phases of the Afro-American and African Studies Program. It is here that students utilize their skills in learning and communication.

PHASE I students may participate in various tutorial programs and give valuable assistance to senior citizens. Sample areas of involvement:

Elementary Schools
Junior High Schools
Senior High Schools
Green Acres Rest Home

PHASE II AND PHASE III projects emphasize the aesthetic and social realms of Black life and are open to intuitive explorations and experimental research. Sample areas of involvement:

Oyo Tunji Village
Kwanzaa
Charlotte-Mecklenburg Afro-American Cultural and Service Center
Development of Independent School
Black Business Enterprises

Student's Trip to Africa
Charlotte City Police Department
Mental Health & Allied Services
WGIV
Legal Aid Society

PHASE IV projects should be geared to extensive research in both African and Afro-American Studies.

COURSE DESCRIPTIONS

AAA 101. THE BLACK EXPERIENCE I. (3) Core course for all students with an interest in the personal development of Black awareness. Opportunities for exploration of self definition and development of interpersonal relationship skills which will create and facilitate effective community dialogue and action.

AAA 102. THE BLACK EXPERIENCE II. (3) Prerequisite: AAA 101 or the consent of the instructor. Core course for all students with a desire for further personal development of Black awareness. Student orientation to experiences involving a Black perspective. Insight concerning the significance of an Afro-American experience as a relevant and serious topic for study and examination.

AAA 203. AFRO-AMERICAN CULTURE I. (6) A survey course which analyzes the Afro-American experience through literature, music, drama, and art. Research and creative action projects will be required.

AAA 204. AFRO-AMERICAN CULTURE II. (6) A survey course which examines social, political, economic, and educational institutions from the Black perspective. Examination of these institutions in part through directed field work.

AAA 350. TOPICS IN AFRO-AMERICAN AND AFRICAN STUDIES. (3) Treatment of a special topic. May be repeated for additional credit with approval of the director.

AAA 390. RESEARCH METHODS. (3) Prerequisite: completion of Phase II or consent of the instructor. The design of a research project from the Black perspective with emphasis on developing sound research methods.

AAA 401. SENIOR SEMINAR. (3) Prerequisite: completion of Phase III; corequisite: AAA 499. Reading, discussion, reports. Peer critique of conceptualization, methodology, and research of senior project. (May be repeated for credit with consent of Advisory Committee.)

AAA 490. HUMAN RELATIONS LABORATORY. (1-3) Prerequisite: completion of Phase III and invitation of the instructor. Certain Phase IV students will be given opportunity to develop laboratories in human relations with students in Phase I, II, and III.

AAA 492. COLLOQUIUM. (3) Prerequisite: consent of the instructor. A weekly colloquium for students engaged in research and writing to provide opportunity for mutual stimulation, critique, and problem solving. Not open to majors for credit.

AAA 499. SENIOR PROJECT. (3) The writing of the senior thesis or work on an equivalent project. (May be repeated for credit with consent of the Advisory Committee.)

AMERICAN STUDIES

Acting Coordinator: Assistant Professor Blackwelder

The American Studies emphasis is intended to allow a student to focus strongly on various aspects of the culture of the United States while also gaining further variety of background from other facets of the University's curriculum. It is hoped that through this concentration he will gain insight into the interrelatedness of various aspects of American life, both past and present. (Students intending to teach in junior or senior high school should also find such an interdisciplinary emphasis to be very advantageous.)

A student desiring an emphasis in American Studies will major in English or History (following the basic pattern of one of those majors) and will take 27 hours in courses allowed toward the American Studies emphasis. In most instances there will be some overlapping of the requirements for the degree proper and for the American Studies emphasis.* All American Studies students will take American Studies 301, Introduction to American Studies, no later than the junior year, sooner if possible. Also, each is to take at least three hours of American Studies 303.

Following are examples of possible distribution of courses in a minimum American Studies emphasis. If one presumes only courses with academic credit of three hours each, the student would have to take nine courses for the emphasis. Those nine courses (27 hours) would be divided in one of these three ways:

1. *Three courses in major department,* and *six courses outside major department* (including:
   American Studies 301 (required)
   American Studies 303 (required)
   Four other approved courses outside major department)

2. *Four courses in major department,* and *five courses outside major department* (including:
   American Studies 301 (required)
   American Studies 303 (required)
   Three other approved courses outside major department)

*In the department of the student's major, 12 of the 27 hours for the American Studies emphasis also will be accepted as part of the courses in the subject of the major which are required for the department's degree if the student wishes to so apply all or part of 12 of the 27 hours of the emphasis; and the department may accept more than 12 hours for its requirements for the major if it finds it appropriate to do so. The other courses of the 27 hours will be applied, as appropriate, to other University requirements for the degree. In the American Studies emphasis, a maximum of 15 hours and a minimum of nine hours of courses in the department of the major are to be applied toward the 27 hours required for the emphasis. For example, an English major also acquiring an American Studies emphasis is assured that at least four of the nine courses for the emphasis can be counted toward the hours in English required for the major. The other five courses will be applied to other parts of the degree requirements. On the other hand, at least three and no more than five of his nine American Studies courses are to be in English. (This example presumes courses with academic credit of three hours each.) This arrangement allows and encourages the student to go in two directions at once (one traditional and one focused interdisciplinary), both within the time usually spent as an undergraduate.

3. *Five courses in major department*, and *four courses outside major department* (including:
   American Studies 301 (required)
   American Studies 303 (required)
   Two other approved courses outside major department).

(In each of the above examples the student is allowed by his major department to credit at least 12 hours toward the major courses for his degree if he so wishes, and in the last example, 15 hours can be so credited.)

To meet the requirements for the emphasis, a student also must have at least a 2.0 average on the courses taken at UNCC which are offered for the emphasis. Students in this program will be advised by that person in the department of the major designated to advise American Studies students. Variety of experience is encouraged. American Studies students are also encouraged to take parallel courses during the same semester when possible (e.g., Southern history and Southern literature during the same semester). The degree will be in English (American Studies) or History (American Studies) and will be so indicated on the student's transcript.

COURSE DESCRIPTIONS

AMERICAN STUDIES 301. INTRODUCTION TO AMERICAN STUDIES. (3) To be taken by all students taking an emphasis in American Studies. Should be taken by them no later than the junior year and sooner if possible. An introduction to the rationale of American Studies and an application of it to a small span of American chronology to reveal the interrelationships of as many facets of American culture as possible. For example, the student might be helped to see the interrelatedness of such things as philosophy, religion, literature, music, politics, science, business and industry, art, etc., in the United States during a single decade, the significance of that interrelatedness, and how to apply for himself the same approach to other periods. (Not limited to American Studies students. Can be counted as a humanities course for general degree requirements.)

AMERICAN STUDIES 303. INDEPENDENT STUDY OR DIRECTED READING IN AMERICAN STUDIES. (3) May be repeated once for credit, with permission of the student's adviser. (Not limited to American Studies students but should be under the supervision of an American studies adviser or someone designated by him. Can be counted as a humanities course for general degree requirements.)

AMERICAN STUDIES 350. TOPICS IN AMERICAN STUDIES. (3) To be offered from time to time to supplement courses available, to offer an American focus not available elsewhere in the University, or to provide cross-disciplinary courses with an American focus. For example, courses on American literature and art, American philosophy and politics, etc., might be made available as

their being offered is deemed appropriate. May be repeated for credit with permission of the student's adviser. (Not limited to American Studies students. Can be counted as a humanities course for general degree requirements.)

The following additional courses have been approved for the American Studies emphasis. However, appropriate deletions may be made from time to time. The American Studies advisers will have up-to-date lists. Also, consideration will be given to approval of other courses of special interest to the student, especially topics courses or individual study, if pertinent to American Studies.

(*Courses with an asterisk are especially recommended for American Studies students.)

English: 204, 341, 342, 343, 344, 345, 347, 348, 349, 355, 441, 445;

History: 103, 104, 371, 372, 374, 375, 377, 378, 379, 380, 383, 384, 386, 391, 393, 414*, 415*, 416;

Economics: 370;

Liberal Engineering: 311;

Afro-American and African Studies: 101, 102, 203, 204;

Philosophy: 317*;

Religious Studies: 204, 331*, 332, 433;

Criminal Justice: 438, 439, 449, 478, 479, 488, 489, 490;

Geography: 303*, 304;

Earth Science: 341*, 354;

Political Science: 110*, 301, 303, 305, 307, 309, 311, 312, 313, 314, 315, 316, 317, 318, 319, 321, 322, 323, 357;

Sociology: 271, 310, 321, 325, 432, 480.

DEPARTMENT OF CREATIVE ARTS

Chairman: Assistant Professor Beasley

Art
Associate Professors: Anderson, Hill, Mason
Assistant Professors: Bringle, Byrum, Hybel, MacKillop
Instructor: Wofford
Lecturer: Loyd

Dance:
Assistant Professors: Sofras, Zimmermann

Music:
Professors: Booth, Mathis
Associate Professors: Dailey, Glazer, Gehner
Assistant Professors: Dillard, Mosley, Turner
Instructor: Kennedy
Lecturer: L. Booth

Theater:
Associate Professors: Rackley, Reed
Assistant Professors: Beasley, Croghan
Instructors: Pellenberg, Bays

BACHELOR OF CREATIVE ARTS DEGREE PROGRAM

Introduction

The BCA offers each student more than just a degree in the creative arts. First, it places initiative on the individual student and his ability to perceive relationships (problem-solving). Second, it offers a new relationship between student and teacher. Rather than dividing students into classes, feeding them information and expecting all students to assimilate the same material identically, the faculty member serves as an adviser and resource person.

Third, it allows the student to explore facets of the arts which interest him and relate to his talents. Finally, recognizing that education extends beyond the bounds of mastering only one art, the student is encouraged to explore all aspects of creativity, the arts and their relationship to the individual and his development. To accomplish this, the student has at his disposal all of the University's resources.

Admission to the Program

Upon admission to the University of North Carolina at Charlotte, a student may apply for admission to the Bachelor of Creative Arts program. The prospective student will be requested to interview with the faculty from the major area of his interest: art, dance, music or theatre. Additionally, a student will be asked to audition, submit a portfolio and generally give as thorough an accounting of his background as possible. Within a reasonable amount of time after his interview, a student will receive notification of the success of his application to the Bachelor of Creative Arts program.

MECHANICS OF THE PROGRAM

A. Eligibility: The program is open to all students eligible for admission to the University of North Carolina at Charlotte. Since the program is flexible and organized around the individual student's motivation and interests, a student may enter the program from another division within the University or transfer from another institution. Evaluation of traditional credits is necessary since the experiential aspects of seeking and discovering relevance and relationships is a subjective process and since the student's thrust, interest and pace are his own. Advancing through the program and the completion of the degree are determined by the continuing process of evaluation (see next page).

B. Transfer Students: Any person from outside the Creative Arts Department coming into the BCA program is considered a transfer student.

C. Withdrawal: The faculty and the student involved in the total efforts of a student who is withdrawing from the program will equate his work into conventional hours credit, including grades and quality points. Additionally, a prose record of evaluation will become a part of the student's permanent record at this institution, to be shared with the institution being transferred to if that institution so desires.

D. Central Information Chart: A continuous running calendar blocked off into days has been set up. The following information is communicated by means of this calendar: activity, date, time, leader, etc. These will be posted by individual faculty members prior to the activity. Time conflicts can be minimized by checking the CIC before scheduling the activity.

E. Structural Method:

1. General Contractual Procedure: a. The student writes a proposal that states and defines a problem at its beginning and indicates a possible direction toward a solution. b. If a change of direction or completion date is undertaken before the final evaluation, the project adviser must be consulted. c. Reviews are in oral and/or written forms. The reviews of the students' works are done by the student, his fellow students and the adviser(s). d. The master review is kept on file in the office of the Creative Arts Department until graduation. (The student and his adviser receive a copy of each master review report.)

2. Seminars: Seminars and group sessions cited in the outline are both scheduled and free-forming interacting groups, focusing on specific common interests and problems.

3. Review and Evaluation: Because of the nature of the program, the student's major adviser and his other mentors are constantly involved with the student in evaluating. The pro-

gram is intended to develop within the student honest self-examination and self-evaluation. The success of the student will, to a great degree, be determined by his own increasing ability to assess and evaluate his own potential, commitment and accomplishment. Semester and yearly evaluation procedures (see below) serve an educative function in that they involve the student in self-evaluation and in confrontation with evaluation by his peers and his instructors.

By the end of each semester, evaluation of the student's progress will have been made by the student's advisee group, consisting of faculty and students. This will follow a self-evaluation. The grade designation will be:

P - PROGRESSING
S - SATISFACTORY
U -UNSATISFACTORY

Since the evaluation is based on the student's moving toward becoming an independent, self-motivating learner, only one grade will be assigned.

The grade of *P* reflects awareness and in-depth involvement within the evaluation guidelines.

The grade of *S* reflects momentum towards realization of the evaluation guidelines.

The grade of *U* reflects a lack of interest, participation and motivation towards realization of the evaluation guidelines.

Since the program is geared to the student's specific interests and insights, a student whose evaluation is unsatisfactory will be encouraged to reassess his goals and his desires and abilities to move productively on his own.

This reassessment will be done by the student's group. This effort will be toward helping the student determine the field and the structure in which he can function more productively, rather than simply eliminating him from the Creative Arts program.

F. Teacher Certification: Teacher certification through the BCA requires: 1. A student must declare certification intent at least four full semesters prior to the awarding of his degree. 2. The student must demonstrate proficiency in communication and humanities; natural, social and behavioral sciences; psychological and sociological foundations of education; parent-school-community relationships; curriculum activities and techniques; and materials, methods and practices appropriate to the teaching area and level. A student must show an awareness of the various educational philosophies relating to the arts. 3. Student teaching may be done in connection with projects. The 150 hours required in actual classroom teaching may be carried on within

the eight semester residency as the student feels the need to put himself in teaching situations.

G. Residence: The complete program will require a minimum of eight semesters, the final two of which must be done in the BCA program. A full semester term is equal to one semester. For a transfer student, any semesters completed before entering the program will apply toward this minimum.

H. Completion of Degree

1. Recommendation by principal professor, by one other professor in the field and by two professors from outside the candidate's field.

2. Appraisal of candidate's portfolio, manuscripts or performance by the principal professor and by three other professors.

3. Recommendation by a review board of two students from candidate's field.

I. *First Year*

A. *Art*

A first year program designed to offer the beginning student in art:

1. A thorough orientation to the objectives of the BCA program and the personal involvement necessary to achieve independent status.

2. An understanding of the basic visual fundamentals, principles and art theory necessary to the formulation of projects and independent research.

3. A format for learning that offers an alternative method of education in the arts, with emphasis on the interrelationship of the arts and the other academic areas.

4. An opportunity to work independently, and in groups, with students of similar needs, directions and levels of artistic development.

5. An opportunity to fail with recourse for establishing positive new directions.

6. An opportunity to work with experienced students in the program to help establish sound working patterns necessary for personal achievement and satisfaction.

7. A foundation for the development of personal as well as artistic maturity.

8. The responsibility of learning to design one's own educational future.

9. An opportunity to work with all area coordinators and faculty to help orient your needs as a first year student.

10. An opportunity not every student can handle or cope with, the first year program is designed to help the student move as gracefully as possible in his educational process, but this method is not guaranteed for all. The student will be asked to make this evaluation the first year.

Semester I

Phase I
2 wks.

Orientation to the BCA
Seminars, workshops, experience in learning.

a. What is the BCA? (The philosophy specific and general.)
b. Role of student
c. Role of adviser
d. Role of coordinators and chairman
e. Role of peers, peer evaluation, advisee group
f. Resource persons and faculty
g. Role of artist as problem former and solver
h. Problem solving techniques
i. Why paper work is necessary and who is responsible
j. Summation of mechanics, individual roles, philosophy and responsibilities

Phase II
6-7 wks.

Presentation of seminars by various faculty and faculty teams of visual fundamental and interrelated principles.

a. Project formation as related to the elements of design
b. Project formation related to principles and fundamental theory
c. Criticism and evaluation-project work
d. Art area faculty seminars
e. Tri-area seminars-small groups on project design
f. Art history block-flexible
g. Summation and analysis

Phase III
2 wks.

Making contacts outside the BCA and Rowe Arts Building

a. Short term projects outside Rowe Arts testing relationship of the art

	and the artist to other academic areas.
Phase IV	Participation in faculty advisee group meeting and interest area seminars. a. Responses, questions, summation b. Semester evaluations
Semester II *Phase V* *6-8 wks.*	Continuation of visual fundamental seminars as pertaining to specific areas and media a. Working more with applied faculty b. Formulation of possible interest areas and directed study. c. Media survey and exploration - seminar work. d. Project continuum theory - what is the need? e. Summation
Phase VI *2 wks.*	Mock project proposal and critical analysis
Phase VII *2-3 wks.*	Actual project work reference to visual fundamental exposure and evaluation by entire freshman group, coordinator, related faculty.
Phase VIII	Assignment of advisers by April 15, analysis of first year program and screening for students seeking second year status.

The first year program adviser is responsible for the freshman student's progress through the entire first year. The student is responsible to this adviser by attending weekly group meetings and individual advising sessions.

B. *Music*

1. The Phase One program in music is designed to smooth the transition for freshmen and transfer students from a structured educational environment to an unstructured one. Each new student in the Bachelor of Creative Arts must make this adjustment in order to embark upon a program involving self-motivation and initiative. An attempt is also made in the Phase One program to clarify the ideal of the BCA program and to give practical experience to each student in the problem-solving technique. It is hoped that during the first year, the student will begin to develop a perception of the arts as they relate to one another.

A. Orientation discussions: Sessions to help the student understand how he can best develop his abilities in the BCA program. These discussions will include descriptions of how we go from the specific to the general; that education can be achieved through music, rather than the education being assimilated in order to "get at" art.

B. Define goals: Each student expresses his educational and professional goals. This is necessary in order to help him determine his course of study at UNCC. Consideration is made as to not only "What basic skills do I need?," but "What kind of person is needed to carry out this plan successfully?"

C. Identify resources: Procedures for use of the library and the Rowe listening lab are outlined. The Rowe Project Board and music area Resource Board are introduced. Workshops and seminars and the procedure for establishing both are described.

D. Specialized resources established: Faculty members are introduced and their special fields of interest described. Students then identify their principal or "applied" professor, and an association is established. Ensemble work is encouraged and organized for instrumentalists and vocalists, and composers are organized into a peer group. Teacher certification is discussed and interested students identified.

2. Group Activity: Designed to demonstrate how one can begin with sound and learn about music: a beginning in process of starting with music and learning about other aspects of education as they relate to music.

A. Melody. Through the study of a melody, the group will consider notation, ear-training, theory, style, color, shape in music.

B. Harmony. Using their own melodies, the students will discuss tonal and non-tonal techniques of composition. Style and the effect of different styles will be considered, thus incorporating the related field of psychology, acoustics and history, to name a few.

C. Rhythm. Motion and speed will be discussed.

D. Tone color. The drawing together of these experiences with melody will be the expression of the melody in its intended medium. This may necessi-

tate the study of instrumentation, vocal potentials, electronic devices, ancient performance practices or, simply, development of the composer's ability on his instrument.

3. Project. Association with the applied professor will result in the emerging of a piece of music as a significant concern for the student. A project will evolve, and, as it does, the group will help the student develop the project's many facets. Procedures for drawing up a project proposal will be outlined, and presentation of the project described.

4. At the completion of a project, the student will be evaluated by a group consisting of his major adviser, his applied professor (project adviser) and his advisee group, perhaps including peers who are not in the advisee group.

C. *Theatre*

C. Freshmen theatre students, as well as transfer students without a background in theatre, form a peer group. It is desirable to have these students in one group in order to satisfy two needs:

1. the need to have freshmen understand the concepts and mechanics of the Creative Arts program with some consistency;

2. the need to provide freshmen students with a forum in which they can discuss problems knowing that no one in the group is more experienced in dealing with such problems—a lessening in the students' fears of intimidation and ridicule.

Each adviser is responsible for assuring that the freshman is acquainted with and exposed to the other members and upperclassmen. In addition to whatever exposure the student seeks on his own, he will be in contact with other Creative Arts faculty members through productions, workshops and seminars.

The transfer student or freshman with a background in theatre would be duplicating experience needlessly should he/she be a member of this group. Therefore, such students are assigned to other faculty members as advisees. These students are encouraged to attend sessions with freshmen which deal with the concepts and mechanics of the Creative Arts program. Such a decision, however, should be made by the adviser and the student.

1. Conferences with Adviser:
   Each student in the first year program meets with his/her adviser at frequent intervals during his/her first year. During these meetings discussion centers around three major topics:
   A. A determination of the student's interests and level of artistic and humanistic development;

B. The establishment of a program of study for the first year designed to strengthen the student's major interest area and to offer fundamental skills and a basic orientation into other areas of the theatre arts.
C. The development of the student's awareness of various resources—including people, books, seminars, etc.—pertinent to the student's interests and personal growth.

2. Participation in Theatre Productions:
Each freshman and transfer student is expected to participate in some aspect of each theatre production offered by the Department of Creative Arts during the year. Involvement must not be limited to the student's major interest. The student should seek experience in as many phases of theatrical production as possible; acting, stagecraft, stage lighting, costuming, properties, sound, make-up, publicity, front-of-house and, in some cases, design and directing.

3. Workshops:
Workshops will be organized to augment the student's experience in the area of his/her major interest and to supply fundamental knowledge, skills and experience in other areas of theatre. Workshops in the student's major interest, if one is developed by this point, may be continued. These workshops will be staffed by members of the theatre faculty and by advanced, qualified students.

D. *Dance*

In addition to familiarization with the philosophy and mechanics of the Creative Arts Program, the goal pf Phase I is to expose students to basic skills in contemporary dance. The Phase I program would offer:

1. Workshops in basic technique and theory of contemporary dance styles
   a. modern dance daily for 1½ hours per session
   b. ballet twice a week for 1½ hours per session

2. Exploratory movement workshops
   a. improvisation
   b. movement technique based on the principles of dance
   c. movement motivation

3. Workshops in areas related to dance
   a. participation in relevant aspects of Theatre's Phase I program (lighting, costuming, make-up design, acting)
   b. participation in relevant aspects of Music's Phase I program

The students would be expected to be involved in dance concerts, either as performers or as technicians, and to participate in special seminars offered by guests or other faculty members of the BCA program.

His/her exploratory experiences should be augmented by individual studies, developed by the student in consultation with the adviser and advisee group. Research into other dance forms (mime, jazz, ethnic) and related theoretical studies (anatomy, kinesiology, dance history) is encouraged.

Involvement in Phase I may last as long as two years. It will end whenever the student, in consultation with his/her adviser and advisee group, has developed a basic level of competency in dance skills as outlined above and feels the need to pursue a specific aspect of dance such as teaching, choreography, or performance.

While in Phase I, some students may wish to change their major. They should be encouraged to do so at this point in their development.

II. *Second Year*

Conferences with consulting professors (to be arranged). The student, with his major adviser, plans a course of study tailored to his interests and needs. Such a plan would involve consultants from various departments in the University who would serve as resource mentors.

A. *Music*

1. Musicianship studies
   a. Independent projects: Study areas are to be determined by the student's special interests and skills; such as counterpoint, composition, orchestration and conducting. Such interests as the musical significance of the historical development of instruments, the psychological and physiological mechanisms of the production and perception of sound and the cultural milieu of certain musical styles should lead the student to investigations involving fields other than the Creative Arts.

   b. Seminars: These seminars involve the topics arising from independent projects. The purpose is to present an integrated view of the evolution of music—its literature, theory and changing compositional and performance practices.

2. Performance studies

   a. Individual

   b. Ensemble

B. *Visual Arts*

1. Studio

   a. General floating seminars, e.g., Visual Fundamentals, Methods, Techniques, etc.

b. Individually oriented investigations. The student could choose one, two or three interest areas to pursue concurrently or consecutively. These investigations might include both highly specialized art areas and topics which would cut across departmental boundaries. For example, studies in the technical aspects of ceramics or color or sculpture could lead the student toward chemistry, psychology or history. Painting, depending on interest in styles, could lead to poetry, mathematics, iconography, history and anatomy.

c. Consulting professor and one other visual arts instructor. Professors from other departments are also invited if a topic demands more precise information.

d. This could also relate art history to the specific topics of investigation the students are currently pursuing.

C. *Theatre*

1. Studio—Student chooses one of the following areas:

a. Acting and Directing
(1) Group - Skill in the use of voice and body.

(2) Group - Inner technique: Improvisations, theatre games, mime, sensory and emotional exercises.

(3) Individual or group - individual projects in characterization. Group work on current major or student-directed workshop productions.

b. Designing

Individual projects in theatre design. The student and his consulting professor work out individual and group projects in theatre design, correlating these with the student's art and/or projects.

c. Writing

(1) Individual writing projects under the guidance of theatre staff and consultants. This project might be geared to workshop productions.

(2) Group discussions and criticism of student's manuscripts.

2. Studies in dramatic literature

Group and individual programs of reading and research determined by each student's interest and coordinated with his work in acting, directing, writing or design.

3. Colloquium

Theatre is the context of selected historical periods—readings, discussions, lectures, research.

III. *Third and Fourth Years*

A. *Assignment of Creative Arts Adviser*

1. The student and his major adviser plan specific projects in the student's area of major concern, e.g., violin, painting, directing and education in the arts.

It is important, however, that the planning of such projects will assist the student to an even greater awareness of his need to move from the specific to the general.

2. The student's third and four years of study operate largely on a contractual basis. Therefore, time allocations and projects pursuits are more flexible from semester to semester.

B. *Seminar/Workshop*

1. Seminar/workshop offerings could be changed, expanded, etc., to meet the needs and interests of the students. Seminar/workshops are for all Creative Arts students.

2. Seminar topics would deal not only with the arts but also with more general and interrelated issues concerning the human condition.

3. Examples of seminar/workshop topics:

a. Aural, kinetic and visual environment—past, present, future.

b. Professional—problems of interviewing, procedures of job-seeking, publication, exhibitions, performances, etc.

c. Selected topics in painting, sculpture, counterpoint, playwriting, orchestration, fiction, etc.

d. Selected topics in aesthetics.

e. Arts in urban life.

f. Abstraction, e.g., mathematical formulae, logos, musical and dance notation, etc.

g. Selected topics in arts education, e.g., music education for elementary teachers, art education for elementary and/or secondary teachers.

Directed Projects

Since the program is concerned with the self-thrust of the individual student in the process of discovery in preference to exposure to a body of selected materials, the opportunity for involvement of the non-creative arts major is greater. The non-major will be free to proceed into the program under various seminars open to both creative arts and non-creative arts majors. The non-major will register for the courses CA-071 (Instrumental Music) and/or CA-081 (Chorus) for one hour credit; CA-213A, 213M, 213T, 213D for three hours credit. Students enrolling in these sections will receive a grade according to the University-wide grading system. Beyond the initial seminar, the philosophy of work in the Creative Arts will be based on the same principles as those for the Creative Arts major.

Any regularly enrolled UNCC student other than BCA majors may elect Directed Projects and, subject to the approval of an adviser develop a project which focuses upon the student's unique interest and abilities.

A project may take the form of research, studio lessons, the study of music literature, ceramics, sculpture, painting, writing or countless other forms of the student's devising.

Students electing Directed Projects will need to see the assigned adviser at the first meeting, as designated on the schedule.

Ensemble

MUS 071. (1) Instrumental Ensemble. May be repeated for credit. Credit limited to one semester hour per semester. Prerequisite: consent of instructor.

MUS 081A. (1) Oratorio Choir. Open to anyone. May be repeated for credit. Credit limited to one semester hour per semester.

MUS 081B. (1) University Chorale. Audition required. May be repeated for credit. Credit limited to one semester hour per semester.

DEPARTMENT OF ENGLISH

Chairman: Professor Mason
Professors: Burne, Ellis, McCall, Moose, Denny (Emeritus), Varnas, Wallace (Emeritus)
Associate Professors: Carver, Davis, Gatlin, Hedges, Petrakis, Shapiro
Assistant Professors: Amante, Frazier, R. Grey, Harper J. McGavran, Meyer, Newman, Smedman,* Stone, Watson
Instructors: Bowen, Horton, Keuling, Selden
Lecturers: Bowen, D. McGavran, Seldon, Timson
Lecturers (part-time): Barden, Graham, L. Grey, Lovell Rankin, Reed

A major in English leading to the B.A. degree consists of 30 semester hour of course work above the 100 level. All English majors must take English 101 and 102 (unless exempted). Course requirements at the 200 level shall consist of a minimum of six hours. A maximum of 12 hours from among 200 level courses may count towards the English major. Prerequisites for 200-level courses are English 101 and 102, or the equivalent; 102 may be taken concurrently with a 200-level course with the consent of the department. Requirements above the 200 level are as follows: (a) one American literature course; (b) one British literature course, pre-1800; (c) one British literature course, post-1800 (may include 325, the Romantic period course). Prerequisite for all 300- and 400-level courses is at least one course at the 200 level.

The above requirements apply to the regular English major and to those English majors seeking teacher certification. English majors in the secondary certification program are required to take six hours in English language, linguistics, and/or composition beyond 101-102, and should consult with the College of Human Development and Learning regarding any other courses required for certification.

(Students seeking early childhood (K-3) certification must major in Human Development and Learning. However, the English Department offers a Helping Specialty, or academic concentration, in language and literary study which HDL majors may elect; and these students can also double major in HDL and English. Additional information about these options is available from the English Department and the College of Human Development and Learning.)

Reminder: English majors and HDL students with a Helping Specialty in English who are seeking certification at any teaching level must have a minimum grade point average of 2.5 in all English courses together to be admitted to candidacy before they are allowed to do student teaching.

Note: Whenever a student is admitted to the English Department as a major, his status is conditional upon: his making at least a *C* average for the first nine hours of English taken *here*: and upon his

*On leave academic year 1977-78

making at least a *C* average on the papers written for those courses considered together. If he has the *C* average on courses but not on papers, he may take further work in composition and may qualify fully as an English major if his composition instructor approves. If he meets the above standards, the department will admit him to full status as an English major.

If his average on English courses falls below 2.0 at any time or his composition falls below average, there should be a conference between the student and his adviser as to his continuing status as an English major.

COURSE DESCRIPTIONS

ENGLISH

ENG 099. ENGLISH AS A FOREIGN LANGUAGE. (no credit) Limited to students whose native language is not English who may need additional preparation for their regular academic work, including composition courses.

ENG 101-102. ENGLISH COMPOSITION. (6) Introductory readings in varieties of literature and intensive practice in critical and expository writing. English 101 is prerequisite to 102.

ENG 201. ENGLISH LITERATURE. (3) Prerequisites: ENG 101 and 102. Intensive study of masterpieces of British literature before 1800 in chronological sequence.

ENG 202. ENGLISH LITERATURE. (3) Prerequisites: ENG 101 and 102. British literary masterpieces since 1800.

ENG 203. MASTERPIECES OF MODERN FICTION. (3) Prerequisites: ENG 101 and 102. Readings in selected novels and short stories written since 1850.

ENG 204. MASTERPIECES OF AMERICAN LITERATURE. (3) Prerequisites: ENG 101 and 102. Extensive readings in six to eight authors, approximately half from the nineteenth century and half from the twentieth century, both poetry and prose.

ENG 206. FILM CRITICISM. (3) Prerequisites: ENG 101 and 102. An introduction to film as an art form. Emphasis will be on critical theory and on critical analysis of the form and the content of different kinds of films—e.g., the narrative film, the silent film, the documentary film, etc.—drawn from the international cinema. Students will apply critical theory to the analysis of professionally made films and will have the option of making their own short films.

ENG 207. CRITICAL APPROACHES TO LITERATURE. (3) Prerequisites: ENG 101 and 102. An introductory study of critical methods, such as mythological, psychological and existential, and practice in analyzing and evaluating literature. Limited to English majors and those having the permission of the department.

ENG 208. INTRODUCTION TO DRAMA. (3) Prerequisites: ENG 101 and 102. An introduction to the major principles and types of drama, using representative plays from the major periods of drama, classical to modern.

ENG 211. MASTERPIECES OF WORLD LITERATURE I. (3) Prerequisites: ENG 101 and 102. Readings in Greek, Latin and Eastern works in translation.

ENG 212. MASTERPIECES OF WORLD LITEATURE II. (3) Prerequisites: ENG 101 and 102. Readings in Medieval, Renaissance, and Modern European literature in translation.

NOTE: PREREQUISITE FOR 300 OR 400-LEVEL COURSES: three semester hours of English on the 200 level, unless otherwise specified.

ENG 301. GREEK AND ROMAN DRAMA IN TRANSLATION. (3) A study of selected plays of Aeschylus, Sophocles, Euripides, Aristophanes, Plautus, Terence, and Seneca with emphasis on dramaturgy and the development of the Greek and Roman theater.

ENG 303. CHILDREN'S LITERATURE. (3) Critical study of representative reading materials and approaches to literature appropriate for elementary school children.*

ENG 304. LITERATURE FOR ADOLESCENTS. (3) An introduction to literature for adolescents. Emphases are: (1) the critical analysis and aesthetic judgment of literature; (2) the study of representative examples from all major genres (poetry, fiction, and drama) as well as various sub-genres (such as biography, science fiction, fantasy, and contemporary realistic juvenile fiction) which address the cognitive, emotional and psychological needs of junior high and high school students. Students will practice applying these approaches to adolescent literature and will employ these concepts in critically selecting, evaluating, and judging books for adolescents.*

ENG 313. MILTON. (3) The major poems and selections from the minor works.

ENG 316. SHAKESPEARE'S EARLY PLAYS. (3) A study of 10 representative plays from the Comedies, Histories and Tragedies written between 1590-1600.

ENG 317. SHAKESPEARE'S LATE PLAYS. (3) A study of 10 representative plays from the period 1600-1611, including the late Tragedies and Tragi-comedies.

ENG 323. ENGLISH LITERATURE, 1660-1785. (3) Poetry and prose from Dryden through Johnson; collateral readings in drama and the novel.

*Either ENG 203 *or* 204 may be counted toward the English major, but not both (except that English majors working for teacher certification may apply both toward the major).

ENG 325. THE ROMANTIC ERA, 1785-1832. (3) The development of the Romantic movement with emphasis on the works of Wordsworth, Coleridge and other major poets.

ENG 326. THE VICTORIAN ERA TO 1870. (3) Emphasis on Tennyson, Browning, Arnold, Carlyle, Ruskin and Newman.

ENG 327. ENGLISH LITERATURE FROM 1870-1914. (3) British literature from Walter Pater to the 1st World War.

ENG 328. BRITISH LITERATURE SINCE 1914. (3) The chief British writers and literary movements from World War I to the present.

ENG 332. INTRODUCTION TO MODERN ENGLISH. (3) An introduction to the phonology and grammatical structure of present-day English, with some consideration of word formation, changes in meaning, dialectal differences and problems of usage.

ENG 341. AMERICAN LITERATURE, 1820-1870. (3) The important writers and literary movements from Irving to Whitman.

ENG 342. AMERICAN LITERATURE, 1870-1920. (3) The important writers and literary movements from Whitman through the period of World War I.

ENG 343. AMERICAN LITERATURE, 1920 TO PRESENT. (3) The important writers and literary movements from the twenties to the present.

ENG 344. THE AMERICAN NOVEL OF THE NINETEENTH CENTURY. (3) Major novelists and traditions from the beginnings of the American novel through the rise of realism, with primary attention to approximately eight or ten representative novels.

ENG 345. THE AMERICAN NOVEL OF THE TWENTIETH CENTURY. (3) Major novelists and traditions from the emergence of naturalism to the present, with primary attention to approximately eight or ten representative novels.

ENG 347. EARLY BLACK AMERICAN LITERATURE. (3) A survey of significant writings by Black Americans before the Harlem Renaissance.

ENG 348. TWENTIETH CENTURY BLACK AMERICAN LITERATURE: PROSE. (3) An intensive study of selected black American twentieth century writers of fiction and non-fiction, beginning with the Harlem Renaissance.

ENG 349. TWENTIETH CENTURY BLACK AMERICAN LITERATURE: POETRY AND DRAMA. (3) An intensive study of selected black American twentieth century writers of poetry and drama, beginning with the Harlem Renaissance and including the Black Arts Movement.

ENG 350. TOPICS IN ENGLISH. (3) May be repeated for additional credit with approval of the department. This course is designed to offer special topics not included in other courses.

ENG 351. LITERARY CRITICISM THROUGH ARNOLD. (3) The major schools and critics.

ENG 352. INDEPENDENT STUDY. (1 to 3 semester hours credit.) May be repeated for additional credit with approval of the department. Prerequisite: consent of the department. Individual investigations and appropriate exposition of the results.

ENG 355. INTRODUCTION TO AMERICAN FOLKLORE. (3) An introductory course in which the nature of folklore and the various genres of folklore are discussed. Though all folk-genres are considered, the emphasis will be upon the literary genres of the folktale and the folksong. (Does not satisfy the American literature requirement for English majors.)

ENG 400. ENGLISH PRACTICUM. (3) Designed for the English major who is also preparing to teach, introduces the student to current issues facing the English profession, acquaints the student with a variety of methods for teaching both composition and literature, and, through related experiential work, provides the student with practical experience in the teaching of English prior to his student teaching semester.

ENG 412. ENGLISH LITERATURE FROM THE BEGINNINGS TO 1500. (3) A systematic survey of English literature from its beginnings to the end of the 15th century, excluding Chaucer. All the works studied in this course will be in translation.

Courses for Advaneed Undergraduates

ENG 305. · EXPOSITORY WRITING. (3) The writing of essays, criticism and various forms of exposition.

ENG 306. INTRODUCTORY CREATIVE WRITING. (3) Open to students of at least sophomore standing who have satisfied the requirements of ENG 101 and 102. Writing of fiction, poetry, or drama.

ENG 311. CHAUCER. (3) *The Canterbury Tales, Troilus and Criseyde* and selected minor works.

ENG 321. THE EARLIER SEVENTEENTH CENTURY. (3) Major writers from Bacon and Donne to the Restoration.

ENG 331. HISTORY OF THE ENGLISH LANGUAGE. (3) Origins and development of the English language and its present usage.

ENG 333. LINGUISTICS AND LANGUAGE LEARNING. (3) Readings in, discussion of, and application of linguistically oriented

theories of language acquisition directed towards gaining an understanding of language-learning processes and stages.

ENG 401. MODERN LITERARY CRITICISM. (3) Critical theories of the modern schools.

ENG 405. WRITING WORKSHOP. (3) Prerequisite: ENG 306 and permission of the instructor. May be repeated once for credit with the consent of the department.

ENG 406. ADVANCED EXPOSITORY WRITING. (3) Prerequisite: ENG 305. May be repeated once for credit with the permission of the department.

ENG 413. ENGLISH PROSE AND POETRY OF THE SIXTEENTH CENTURY. (3) The major works (excluding drama), More through Spenser, with attention to the development of the lyric.

ENG 421. THE ENGLISH NOVEL BEFORE SCOTT. (3) Major writers and traditions, Defoe through Jane Austen.

ENG 422. THE NOVEL FROM SCOTT THROUGH THE VICTORIANS. (3) Major writers and traditions through Hardy.

ENG 423. THE MODERN BRITISH NOVEL. (3) Representative British novels showing the philosophies and techniques affecting British fiction, from Hardy to the present.

ENG 424. MODERN IRISH LITERATURE. (3) The study of important developments in Irish literature between 1885 and the death of Yeats (1939).

ENG 431. ENGLISH DRAMA TO 1600, EXCLUDING SHAKESPEARE. (3) A survey of the development of English drama to 1600, with representative plays from the Mystery-Miracle Cycles, the Morality Plays, and Tudor drama, including Lyly, Kyd, Marlowe, Peele, Greene and Dekker.

ENG 432. ENGLISH DRAMA FROM 1600 TO 1642, EXCLUDING SHAKESPEARE. (3) A survey of Jacobean and Caroline drama, including plays by Jonson, Beaumont and Fletcher, Webster, Middleton, Shirley and Ford.

ENG 433. ENGLISH DRAMA FROM 1660 TO 1780. (3) Representative plays of the Restoration and Eighteenth Century (Davenant to Sheridan), studied in connection with conditions in the theater and pertinent dramatic criticism of the period.

ENG 441. COLONIAL AND EARLY AMERICAN LITERATURE. (3) American literature from Colonial times to Washington Irving.

ENG 445. LITERATURE OF THE AMERICAN SOUTH. (3) Selected works of Southern writers from Colonial times to the present.

ENG 450. CONTEMPORARY POETRY. (3) Poetry in English (including translations) since 1940.

ENG 451. MODERN DRAMA. (3) Representative Continental, British and American plays from Shaw to the present.

ENG 452. MODERN EUROPEAN LITERATURE. (3) The study of selected European authors and their intellectual backgrounds.

ENG 453. CONTEMPORARY FICTION. (3) Study of selected present-day novels in English and in translation.

ENG 455. INTRODUCTION TO PAN-AFRICAN LITERATURE. (3) May be repeated for additional credit with approval of the department, as the geographical emphasis varies. A survey of significant Pan-African literature (Caribbean, West African, East African, etc.) emphasizing both the oral tradition and works of contemporary authors.

ENG 461. MODERN ENGLISH GRAMMAR. (3) Prerequisite: Eng 331 or 332. A descriptive analysis of the structure of Modern English, with emphasis upon the transformational approach.

ENG 465. LANGUAGE AND CULTURE. (3) Prerequisite: ENG 331 or ENG 332. Readings in and discussion and applications of the interrelationships between language and culture, including a basic introduction to the study of current American social and geographic dialects, with some attention to the study of pidgin and creole languages.

DEPARTMENT OF FOREIGN LANGUAGES

Chairman: Professor Gabriel
Professors: Bush, Saman, Slechta, Turner
Associate Professors: Gleaves, Hopper, Merrill, Reimer
Assistant Professors: Cernyak, McLeod, Miller, Park, Rose
Instructors: Bret, Vance

Programs in each of the several foreign languages offered are designed to give a student competence in four skills—understanding, speaking, reading and writing the given language, to acquaint him with the culture and civilization of the country or countries where that language is spoken, especially their literature, and to give him some understanding of the people who speak it. Major programs include advanced linguistic analysis of sound systems and structure and are designed to prepare students for certification by the North Carolina State Department of Public Instruction or graduate work in the major field. Courses above the 202 level are normally taught in the foreign language.

Placement

The Department of Foreign Languages will recommend the placement of a student in a class of a level commensurate with his demonstrated competence at the time of enrollment considered together with his prior language training or experience.

Honors in Modern Languages

The honors program in foreign languages is open both to majors and non-majors who have demonstrated sufficient ability and interest to be capable of guided independent study outside the restrictions of regular course work. Reading for honors in a foreign language may begin as early as the second semester of a first-year course (102), providing the student has been enrolled at the University for at least one semester. Honors students who attain the language proficiency required for the 202 level may choose to read either in the literature or in the civilization of the target culture. Whenever feasible, arrangements are made for non-majors to read in the area of their special interest in cooperation with the department of their major.

Students are invited to enter honors work by recommendation of a member of the department to the Honors Committee for the language concerned. Once accepted for honors work within the department, a student must submit any proposal for a special honors project at least eight weeks prior to the semester in which the work is to be done. A student may drop honors work at any time without penalty (See *University Honors Program*). However, he will not be permitted to reenter the program until the following semester and, in any case, not without review and approval by the Honors Committee.

Laboratory

All foreign language courses at the 100 and 200 level, as well as those numbered 301, 302, and 331, meet for three class hours and one to two hours of laboratory work per week. Whenever warranted, laboratory work may be assigned by the instructor in other courses.

SUGGESTED CURRICULUM LEADING TO A BACHELOR OF ARTS DEGREE IN A FOREIGN LANGUAGE

Freshman Year

English 101	3	English 102	3
History 101	3	Mathematics/Elective	3
Foreign Language 201	4	History 102	3
Elective	3	Foreign Language 202	4
		Elective	3
	13		16

Sophomore Year

Foreign Language 301	3	Foreign Language 302	3
Literature Elective	3	Foreign Language 3xx	3
Science with lab	4	Science with lab	4
Social Science Elective	6	Math or Logic Elective	3
		Elective	3
	16		16

Junior Year

Foreign Language 3xx	3	Foreign Language 4xx	3
Foreign Language 331	3	Literature Elective	3
Creative Arts Elective	3	Philosophy or Comparative Religions	3
Social Science Elective	3	Elective	3
Elective	3	Elective	3
	15		15

Senior Year

Foreign Language 4xx	3	Foreign Language 4xx	3
Foreign Language 4xx	3	Creative Arts Elective	3
Foreign Language 309	3	Elective	3
Elective	3	Elective	3
Elective	3	Elective	3
	15		15

SUGGESTED CURRICULUM LEADING TO A BACHELOR OF ARTS DEGREE IN A FOREIGN LANGUAGE, WITH CERTIFICATION IN SECONDARY SCHOOL TEACHING

Freshman Year

English 101	3	English 102	3
History 101	3	Mathematics 101 (103)	3
Foreign Language 201	4	History 102	3
Elective	6	Foreign Language 202	4
		Elective	3
	16		16

Sophomore Year

English 201	3	English 202 (203, 204)	3
Foreign Language 301	3	Foreign Language 302	3
Education 201	3	Foreign Language 3xx	3
Social Science (1)	3	Mathematics or Logic	3
A Physical Science	4	A Biological Science	4
	16		16

Junior Year

Foreign Language 3xx	3	Foreign Language 4xx	3
Foreign Language 331	3	Foreign Language 4xx	3
Psychology 201	4	Creative Arts Elective	3
Social Science (1)	3	Psychology 202	3
Health Education 101	1	Foreign Languages 300	3
Elective	3		15
	17		

Senior Year

Foreign Language 4xx	3	Education 304	3
Philosophy or Comparative Religions	3	Psychology 302	3
Foreign Language 309	3	Education 402	3
Foreign Language 4xx	3	Education 451	6
Creative Arts Elective	3		
Physical Education 101	1		
	16		15

COURSE DESCRIPTIONS

FOREIGN LANGUAGES

Languages offered under these courses are designated by alphabetical listing: A—Greek, B—Hebrew, C—Italian, D—Portuguese and E—Other.

FL 101. ELEMENTARY FOREIGN LANGUAGE. (3-4)* Prerequisite: permission of the department. Fundamentals of grammar and phonetics, reading, writing and conversation.

FL 102. ELEMENTARY FOREIGN LANGUAGE. (3-4) Prerequisite: FL 101 or permission of the department. Continuation of FL 101.

FL 201. INTERMEDIATE FOREIGN LANGUAGE. (3-4) Prerequisite: FL 102 or permission of the department. Review grammar, conversation, composition and readings based on culture and civilization.

FL 202. INTERMEDIATE FOREIGN LANGUAGE. (3-4) Prerequisite: FL 201 or permission of the department. Review grammar, conversation, composition and readings based on students' needs.

FL 300. METHODS OF TEACHING A FOREIGN LANGUAGE. (2) Prerequisite: junior standing or permission of department. An investigation into current trends and practices of foreign language teaching with special emphasis on practical applications. Readings, discussions, micro-teaching and observation of classroom situations at all levels. Required of all students seeking certification in the teaching of a foreign language.

FRENCH

The French major offers three options:

A. The French major leading to the B.A. degree consists of FRE 201, 202, 301, 302, 303, 304, 309, 331 and at least 12 hours on the 400 level, including FRE 491. Related work is to be approved by the department and is indicated in the Suggested Curriculum leading to a Bachelor of Arts Degree in a Foreign Language.

B. The French major leading to a B.A. degree with secondary school teaching includes the same courses as A, and in addition all courses required for certification as indicated in the Suggested Curriculum Leading to a Bachelor of Arts Degree in a Foreign Language, with Certification in Secondary School Teaching. This program is worked out in collaboration with both the Department of Foreign Languages and the College of Human Development and Learning.

A or B is required for recommendation either to teaching or to graduate school.

C. The French major leading to a B.A. in French for the non-professional consists of FRE 201, 202, 301, 302, 303, 304, 309, 331 and six hours of French at the 400 level. Candidates for a degree with certification in elementary school teaching may take option C, plus FL 300.

*The number of hours credit for each course (3-4) is determined by the necessity or availability of a lab program.

FRENCH

FRE 101. ELEMENTARY FRENCH. (4) Fundamentals of French grammar and phonetics, reading, writing and conversation. Three class hours and two hours of laboratory work per week.

FRE 102. ELEMENTARY FRENCH. (4) Prerequisite: FRE 101 or permission of the department. Continuation of FRE 101. Three class hours and two hours of laboratory work per week.

FRE 201. INTERMEDIATE FRENCH. (4) Prerequisite: FRE 102 or permission of the department. Review grammar, with composition and conversation based upon readings on French culture and civilization. Three class hours and two hours of laboratory work per week.

FRE 202. INTERMEDIATE FRENCH. (4) Prerequisite: FRE 201 or permission of the department. Review grammar, composition and conversation, based upon readings in French prose and poetry. Three class hours and two hours of laboratory work per week.

FRE 209. FRENCH CIVILIZATION. (3) Conducted in English. No knowledge of French required. Open to majors or non-majors for elective credit. A study of the French people, past and present, with emphasis on cross-cultural contrasts in attitudes and values.

FRE 301. ADVANCED FRENCH GRAMMAR, COMPOSITION AND CONVERSATION I. (3) Prerequisite: FRE 202 or permission of the department. For prospective teachers of French and students who want intensive oral and written work in the language. Oral reports and conversation on topics prepared from such sources as journals and newspaper articles.

FRE 302. ADVANCED FRENCH GRAMMAR, COMPOSITION AND CONVERSATION II. (3) Prerequisite: FRE 202 or permission of the department. Informal conversation on diversified prepared topics, newspaper and magazine articles. Students will be given maximum opportunity for self-expression.

FRE 303. INTRODUCTION TO THE STUDY OF FRENCH LITERATURE. (3) Prerequisites: FRE 202 or permission of the department. Study of major works of French literature with emphasis on in-depth analyses of individual authors, works and related movements. Readings, discussions, presentations and *explications de texte.*

FRE 304. THE DYNAMICS OF FRENCH LITERATURE. (3) Prerequisite: FRE 301 or FRE 202 and permission of the department. A study of the sources and the evolution of literary forms, themes and symbols and the interrelationships of literature, history and society as perceived in French literature. Lectures, oral reports and discussions.

FRE 309. FRENCH CIVILIZATION. (3) Prerequisite: FRE 202 or permission of the department. A study of the French people, past and present. Special attention to cross-cultural contrasts in attitudes and values. Conducted in French.

FRE 331. FRENCH PHONETICS. (3) Prerequisite: FRE 202 or permission of the department. Study of the sounds of the French language, their production and their representation by means of the International Phonetic Alphabet. Practice in reading and speaking with proper rhythm and intonation. (May be repeated for credit with permission of the department.)

FRE 350. SELECTED TOPICS IN FRENCH. (3) Prerequisite: junior standing and consent of the department. Credit may be repeated.

FRE 360. FRENCH LITERATURE IN TRANSLATION. (3) Prerequisite: none. Study of selected works of major French writers translated into English. Available to French majors for elective credit only. May be repeated for credit with different content. Course conducted in English.

FRE 401. FRENCH LITERATURE OF THE TWENTIETH CENTURY. (3) Prerequisites: FRE 303 and 304 or permission of the department. Concentration on the principal authors and movements of the contemporary period.

FRE 403. FRENCH LITERATURE OF THE NINETEENTH CENTURY. (3) Prerequisites: FRE 303 and 304 or permission of the department. Concentration on the sources of nineteenth century literary ideas, the principal literary movements and the principal poets, dramatists, novelists and critics.

FRE 405. THE AGE OF ENLIGHTENMENT. (3) Prerequisite: FRE 303 or permission of the department. Major emphasis on "les philosophes," especially Montesquieu, Voltaire, Diderot and Rousseau.

FRE 408. THE SEVENTEENTH CENTURY. (3) Prerequisite: FRE 303 or permission of the department. Study of Pre-Classical and Classical trends in seventeenth century French literature. Emphasis on the work of major writers of the period: Descartes, Pascal, Corneille, Moliere, Racine, La Fontaine, Boileau and Mme de Lafayette. Outside readings and reports.

FRE 411. FRENCH-AFRICAN LITERATURE. (3) Prerequisite: FRE 302 or permission of the department. Study of sub-Saharan French-African literature from the colonial period through the contemporary period. Course conducted in French.

FRE 417. FRENCH LITERATURE OF THE MIDDLE AGES. (3) Prerequisite: FRE 303 or permission of the instructor. Study of French literature from the *Chanson de Roland* to Francois Villon. Knowledge of the Old French Language is not a prerequisite but may

be acquired by special arrangement with the department. Outside readings and reports.

FRE 418. FRENCH LITERATURE OF THE RENAISSANCE. (3) Prerequisite: FRE 303 or permission of the instructor. Study of French literature from 1480 to 1610. The influence of Humanism, Italianism and the Religious Wars on French literature. Emphasis on Rabelais, Ronsard and Montaigne. Outside readings and reports.

FRE 450. SPECIAL TOPICS IN FRENCH. (3) Prerequisite: two 300 courses or permission of the instructor. Treatment in depth of a special subject group or figure in French literature or French culture. May be repeated for credit with change of topic.

FRE 491. SENIOR COLLOQUIUM. (3) Prerequisite: senior standing and permission of the department. Special problems in the major field. Collateral readings and term papers. FRE 491 is required of all French majors.

GERMAN

A major in German consists of German 201, 202, 301 or 302, 309, 311, 403 or 404, 410, 420 plus six additional hours on the 300 or 400-level, or a total of 32 hours. In addition, 15 hours of related work, to be approved by the department chairman, will be required. Candidates for teacher certification must also take GER 331, making a total of 35 hours of work in the Foreign Languages Department required.

COURSE DESCRIPTIONS

GERMAN

GER 101. ELEMENTARY GERMAN. (4) Fundamentals of German grammar and phonetics, reading and conversation. Three class hours and two hours of laboratory work per week.

GER 102. ELEMENTARY GERMAN. (4) Prerequisite: GER 101 or permission of the department. Continuation of GER 101. Three class hours and two hours of laboratory work per week.

GER 201. INTERMEDIATE GERMAN. (4) Prerequisite: GER 102 or permission of the department. Review grammar, composition and conversation, based upon readings on the culture and civilizations of German-speaking countries. Three class hours and two hours of laboratory work per week.

GER 202. INTERMEDIATE GERMAN. (4) Prerequisite: GER 201 or permission of the department. Continuation of GER 201. Review grammar, composition and conversation, based upon readings on the culture and civilization of German-speaking countries. Three class hours and two hours of laboratory work per

week. Students who wish to continue with advanced offerings in German are advised to select GER 202.

NOTE: In GER 201 and 202, the student selects either the audio-visual laboratory (individual and group work with recorded and filmed materials supplementing classroom studies) or the "drama" laboratory (participation in the preparation and performance of a German drama).

GER 203. TECHNICAL GERMAN. (4) Prerequisite: GER 201. The student reads and prepares English translations of German publications in his major field of concentration. Not open to German majors.

GER 209. INTRODUCTION TO GERMAN LIFE AND THOUGHT. (3) Conducted in English. No knowledge of German required. Open to majors or non-majors for elective credit. A study of German life and thought, past and present.

GER 301. ADVANCED GERMAN GRAMMAR, COMPOSITION AND CONVERSATION. (3) Prerequisite: GER 202 or permission of the department. For prospective teachers of German and students who want intensive oral and written work in the language. Three class hours per week and laboratory work as assigned by instructor.

GER 302. ADVANCED GERMAN GRAMMAR AND COMPOSITION. (3) Prerequisite: GER 202 or permission of the department. Intensive review of German grammar. Discussion of prepared topics drawn from newspapers and periodicals. Three class hours per week and laboratory work as assigned by instructor.

GER 309. GERMAN CIVILIZATION. (3) Prerequisite: GER 202 or permission of the department. Composition and conversation based on readings in the culture, civilization, art and literature of German speaking countries.

GER 311. TOPICS IN GERMAN STUDIES. (1-3) Prerequisite: GER 202 or permission of the department. Book reports and discussions on collateral readings. Changing topic: a) Short prose fiction, b) The radio play, c) Folk music and folk literature, d) Methods in the study of literature, e) Structure of Modern Standard German, f) Twentieth Century Germany as reflected in literature, and other topics. May be repeated for major credit as topic changes.

GER 331. GERMAN PHONETICS. (3) Prerequisite: GER 202 or permission of the department. Study of the sounds of the German language, their production and their representation by means of the International Phonetic Alphabet. Practice in reading and speaking with proper rhythm and intonation. Three class hours and two hours of laboratory work per week. Transcription exercises and student recordings.

GER 360. GERMAN LITERATURE IN TRANSLATION. (3) For non-majors. Prerequisite: sophomore standing; knowledge of

German not required. May be taken for elective credit by German majors. Reading and discussions of selected works of German literature of topical interest to the student. May be repeated as topic changes.

GER 403. SURVEY OF GERMAN LITERATURE I. (3) Prerequisites: two 300-level courses (not 360) or permission of the department. General introduction to German literature from the Middle Ages to the Classical Period. Book reports and class discussion on collateral readings.

GER 404. SURVEY OF GERMAN LITERATURE II. (3) Prerequisite: two 300-level courses (not 360) or permission of the department. German literature since Classicism. Book reports and discussions on collateral readings.

GER 410. PERIODS IN THE HISTORY OF GERMAN LITERATURE. (3) (a) Medieval literature (b) Classicism (c) Romanticism (d) Contemporary Literature. Prerequisite: two 300-level courses (not 360) or permission of the department. Study of the major writers and works in a given period. Readings, lectures and reports. May be repeated for major credit as topic changes.

GER 420. THE CHIEF GENRES IN GERMAN LITERATURE. (3) (a) The novel (b) The drama (c) Lyric poetry. Prerequisite: two 300-level courses (not 360) or permission of the department. An analysis of a major genre and its development within German literary history. Readings, lectures and reports. May be repeated for major credit as topic changes.

GER 450. SPECIAL TOPICS IN GERMAN. (1-2-3) Prerequisite: One 300-level course or permission of the instructor. Treatment of a special group or figure in German literature, specialized topic in German culture or advanced work in German language. May be repeated for credit with change of topic.

COURSE DESCRIPTIONS

RUSSIAN

RUS 101. ELEMENTARY RUSSIAN. (4) Fundamentals of Russian grammar and phonetics, reading and conversation. Three class hours and two hours of laboratory work per week.

RUS 102. ELEMENTARY RUSSIAN. (4) Prerequisite: RUS 101. Continuation of RUS 101. Graded readings. Three class hours and two laboratory periods a week.

RUS 201. INTERMEDIATE RUSSIAN. (4) Prerequisite: RUS 102 or permission of the department. Review grammar, with conversation and composition based upon readings in Russian culture and civilization. Three class hours and two hours of laboratory work per week.

RUS 202. INTERMEDIATE RUSSIAN. (4) Prerequisite: RUS 201 or permission of the department. Continuation of grammar, conversation and composition skills, based on readings in Russian literature. Three class hours and two hours of laboratory work per week.

RUS 495. SEMINAR IN SLAVIC LINGUISTICS. (2) Study of morphology semantics, phonology and general grammar of Russian and other Slavic languages—Bulgarian, Czech, Polish, Serbo-Croatian, Slovak and Ukranian. Class meeting once a week for two hours. Prerequisite: RUS 102 or the permission of the department.

SPANISH

A major in Spanish leading to the B.A. degree consists of Spanish 201, 202, 301, 302, 303, 304, 309 or 310, and 12 hours of Spanish courses on the 400 level. Spanish 312 may be substituted for 304.

COURSE DESCRIPTIONS

SPANISH

SPA 101. ELEMENTARY SPANISH. (4) Introduction to Spanish with emphasis on auditory comprehension, oral production and control of structure. Three hours of class and two hours of laboratory per week.

SPA 102. ELEMENTARY SPANISH. (4) Continuation of SPA 101, with greater attention to reading and writing. Three hours of class and two hours laboratory per week.

SPA 201. INTERMEDIATE SPANISH. (4) Prerequisite: SPA 102 or permission of department. Reinforcement and expansion of skill mastery developed in elementary courses on basis of grammar review and conversation. Three hours of class and two hours laboratory per week.

SPA 202. INTERMEDIATE SPANISH. (4) Prerequisite: SPA 201 or permission of department. Extensive practice in oral and written control of the language on basis of readings from Spanish or Spanish American literature. Three hours of class and two hours of laboratory per week.

SPA 209. LITERATURE OF THE HISPANIC WORLD IN TRANSLATION. (3) Prerequisite: none. Studies of Spanish or Spanish American literature in translation. Not available to Spanish majors for credit toward major but may be taken for elective credit. May be repeated for credit. Course conducted in English.

SPA 301. ADVANCED GRAMMAR AND COMPOSITION. (3) Prerequisite: SPA 202 or permission of the department. For prospective teachers of Spanish and students who want intensive oral and written work in the language. Both written and oral composition. Reports on collateral reading. Two hours of class and two hours laboratory per week. Course conducted in Spanish.

SPA 302. ADVANCED CONVERSATION AND COMPOSITION. (3) Prerequisite: SPA 202 or permission of the department. For prospective teachers of Spanish and students who want intensive oral and written work in the language. Both written and oral composition. Reports on collateral reading. Three hours of class and two hours laboratory per week. Course conducted in Spanish.

SPA 303. INTRODUCTION TO SPANISH LITERATURE I. (3) Prerequisite: SPA 202 or permission of department. Reading and analysis of representative master works of Spanish literature from its origins through the Golden Age. Course conducted in Spanish.

SPA 304. INTRODUCTION TO SPANISH LITERATURE II. (3) Prerequisite: SPA 202 or permission of department. Continuation of SPA 303 with emphasis on literature of the nineteenth and twentieth centuries. Course conducted in Spanish.

SPA 309. SPANISH CIVILIZATION AND CULTURE. (3) Prerequisite: SPA 202 or permission of department. An overview of the cultural heritage of peninsular Spain. Lecture, discussion, recitation on basis of assigned readings. Course conducted in Spanish.

SPA 310. SPANISH AMERICAN CIVILIZATION AND CULTURE. (3) Prerequisite: SPA 202 or permission of department. An introduction to the cultural heritage of the Spanish American countries. Lecture, discussion, recitation on the basis of assigned readings. Course conducted in Spanish.

SPA 312. INTRODUCTION TO SPANISH AMERICAN LITERATURE. (3) Prerequisite: SPA 202 or permission of the department. Introduction to studies in Spanish American Literature from the sixteenth century through the contemporary period. Course conducted in Spanish.

SPA 331. SPANISH PHONETICS. (3) Prerequisite: SPA 202 or permission of department. Detailed analysis of description and production of Spanish sounds./ Practical exercises to include phonetic transcription and recordings. Two hours of class and two hours of laboratory a week.

SPA 401. NINETEENTH CENTURY SPANISH LITERATURE. (3) Prerequisite: two 300-level courses or permission of department. Survey of peninsular literature from Costumbrismo through the Generation of 1898. Lectures, discussions and reports on basis of extensive collateral reading. Course conducted in Spanish.

SPA 402. TWENTIETH-CENTURY SPANISH LITERATURE. (3) Prerequisite: two 200-level courses or permission of department. Treatment of major literary developments from the Generation of 1898 to the present day. Lectures, discussions and reports on the basis of extensive collateral readings. Course conducted in Spanish.

SPA 405. THE GOLDEN AGE OF SPANISH LITERATURE I. (3) Prerequisite: two 300-level courses or permission of department.

El Lazarillo through El Criticon. Lecture, discussion and reports on basis of extensive collateral reading. Course conducted in Spanish.

SPA 406. THE GOLDEN AGE OF SPANISH LITERATURE II. (3) Prerequisite: two 300-level courses or permission of department. Study of works of the leading dramatists of the period. Lectures, discussions and reports on basis of extensive collateral readings. Course conducted in Spanish.

SPA 410. STUDIES IN SPANISH AMERICAN POETRY. (3) Prerequisite: two 300-level courses or permission of the department. Studies of nineteenth and twentieth century Spanish American poetry. Course conducted in Spanish.

SPA 411. STUDIES IN SPANISH AMERICAN PROSE FICTION. (3) Prerequisite: two 300-level courses or permission of the department. Studies of nineteenth and twentieth century Spanish American prose fiction. Course conducted in Spanish.

SPA 412. STUDIES IN SPANISH AMERICAN THEATER. (3) Prerequisite: two 300-level courses or permission of the department. Studies of nineteenth and twentieth century Spanish American theater. Course conducted in Spanish.

SPA 413. DON QUIJOTE. (3) Prerequisite: two 300-level Spanish courses or permission of the department. Study of Cervantes' masterpiece, which is considered by many critics to be the basis of the modern Western novel. Course conducted in Spanish.

SPA 450. SELECTED READINGS IN SPANISH. (1-2-3) Course may be taken for either one, two or three hours of credit. Prerequisite: two 300-level courses or permission of the department. Consideration of a predetermined author or literary movement. Course conducted in Spanish.

DEPARTMENT OF HISTORY

Chairman: Professor Wrigley
Professors: Hall (Emeritus), Johnston (Robert Lee Bailey Visiting Professor), Morrill, Perzel, Rieke
Associate Professors: *Davis, *Josephson, **Patterson, Ploger (Emeritus)
Assistant Professors: Blackwelder, Clark, Dunkley, Escott, Johnson
Lecturers: Shellman, Smith

A major in history leading to the B.A. degree, except for students in a teacher certification program, consists of 36 hours of history including HIS 121 and at least 6 hours selected from HIS 122, HIS 123 or HIS 124. Three semester hours must be taken at the 400 level. Without the special permission of the chairman of the department, no more than 15 hours may be at the 100 level and carry credit for the major. Related work consists of 15 hours of approved work in a discipline other than history, including the option of 15 hours of related work in a multi-disciplinary area, such as International Studies, Black Studies, Women's Studies and American Studies.

A major in history leading to the B.A. degree and secondary teacher certification consists of 30 hours of history including HIS 121 and at least 6 hours selected from HIS 122, HIS 123, or HIS 124. Three semester hours must be taken at the 400 level. Students seeking certification must take at least three semester hours of American history. Without the special permission of the chairman of the department, no more than 15 hours may be at the 100 level and carry credit for the major.

Related work consists of either 15 hours of approved work in one discipline or 21 hours evenly distributed among three of the social sciences (anthropology, economics, geography, political science and sociology) which will qualify the student for certification in social studies. In addition the candidate for secondary certification must fulfill the requirements of the North Carolina Department of Public Instruction.

A major in history leading to the B.A. degree and an intermediate teaching certificate consists of 24 hours in history including HIS 121 and at least 6 hours selected from HIS 122, HIS 123 or HIS 124. Students seeking certification must take at least three semester hours of American history. Related work must be approved and consistent with the state guidelines for intermediate certification.

Curricula for teacher certification candidates must be in accordance with the curriculum of the College of Human Development and Learning.

*On leave Academic Year 1977-1978.
**On leave Fall Semester 1977

The Honors Program in History

The Department of History offers an honors program as well as individual honors courses. Both history majors and non-majors are welcome to participate. A brochure fully outlining the honors program is available in the history office. Study abroad in Asia, Africa, Europe, Latin America or Canada can be arranged.

COURSE DESCRIPTIONS

HISTORY

Courses primarily for lower division students:

HIS 113. HISTORY-FILM. (3) Treatment of an historical topic, problem or theme. Students may receive credit toward graduation for more than one course under this rubric. History majors may receive credit toward the fulfillment of the hours for a major from only one course under rubric.

HIS 113A: Kenneth Clark's *Civilisation.* An interdisciplinary humanistic introduction to European cultural history. The progress of European civilization as demonstrated by its art, architecture, music and literature. The 13-film *Civilisation* series supplemented by lectures from 14 humanists. Assigned readings, essays and journals required.

HIS 113B. *Ascent of Man.* A multi-disciplinary introduction to the history of social and physical science based upon the *Ascent of Man* by Jacob Bronowski. Films supplemented by lectures from 13 scientific disciplines. Assigned readings and reports required.

HIS 120. EUROPEAN HISTORY TO 1660. (3) Political and cultural developments from antiquity to the Age of Absolutism.

HIS 121. EUROPEAN HISTORY SINCE 1660. (3) A survey of European history from the Age of Absolutism to the present.

HIS 122. INTRODUCTION TO ASIAN HISTORY. (3) A survey of Asian history from early times to the present.

HIS 123. INTRODUCTION TO LATIN AMERICAN HISTORY. (3) A survey of the cultural, political and economic developments in Latin America.

HIS 124. INTRODUCTION TO AFRICAN HISTORY. (3) An introduction to major cultural, economic and political developments in Sub-Saharan Africa.

HIS 125. AMERICAN HISTORY I. (3) Survey of American history from the earliest times to 1865.

HIS 126. AMERICAN HISTORY II. (3) Survey of American history from 1865 to the present.

HIS 250. TOPICS AND HONORS IN HISTORY. (3) Prerequisite: consent of instructor in case of honors. Treatment of an historical topic. May be repeated for credit.

Courses primarily for upper division students:

HIS 301. THE EARLY MIDDLE AGES (312 A.D.-1066 A.D.). (3) Western Europe from Constantine to the Norman Conquest. A study of Christianity, the "Fall of Rome," the Germanic kingdoms, Islam, and the Carolingian and Ottonian empires.

HIS 302. THE HIGH AND LATER MIDDLE AGES (1056 A.D.-1349 A.D.) (3) Western Europe from the struggle between the empire and the papacy to the Black Death. A study of the crusades, origin of towns, parliaments, the middle class, universities, the secularization and centralization of governments.

HIS 303. HISTORY OF GREECE. (3) From the beginning of civilization in Greece to 323 B.C.

HIS 304. HISTORY OF ROME. (3) From the beginning of civilization in Italy to 284 A.D.

HIS 306. THE EUROPEAN WORLD IN THE ERA OF THE FRENCH REVOLUTION. (3) The role of the Enlightenment, the French Revolution and Napoleon in the destruction of the Old Regime and the creation of modern political and social traditions.

HIS 307. THE ITALIAN RENAISSANCE. (3) The world of Dante, Petrarch, Michelangelo and Machiavelli.

HIS 308. REFORMATION EUROPE. (3) The breakdown of the Medieval religious synthesis and the progress of the Protestant Reformation from Martin Luther's *95 Theses* to the death of John Calvin.

HIS 309. NINETEENTH CENTURY EUROPE, 1814-1914. (3) A survey of the major political developments in European history from the Congress of Vienna. Emphasis will be placed on liberalism, nationalism, imperialism and the diplomatic agreements leading to World War I.

HIS 310. TWENTIETH CENTURY EUROPE, 1914 TO THE PRESENT. (3) A review of the causes and results of World War I, followed by an intensive study of the problems of peace, rise of new governments, collapse of collective security, World War II and the postwar period.

HIS 311. RUSSIAN HISTORY FROM EARLIEST TIMES TO 1801. (3) A survey of the development of the Russian people, focusing upon the rise and fall of the Kievan state, the impact of the period of Tartar domination, the rise of Muscovy, and the growth of Tsarist autocracy before the reign of Alexander I.

HIS 312. RUSSIAN HISTORY FROM 1801 to 1917. (3) A survey of the decline and fall of the Tsarist empire, focusing upon the efforts of the last four rulers to perpetuate the monarchy and upon the factors working against the effort.

HIS 313. RUSSIAN HISTORY FROM 1917 TO THE PRESENT. (3) A survey of the development of Soviet Russia, focusing upon the October 1917 Revolution, Lenin's years of rule, Stalin's rise to power, the Five Year Plan and the years since World War II.

HIS 314. HISTORY OF SOCIALISM AND COMMUNISM. (3) A broad treatment of the intellectual roots, major personalities and overall development of socialism before the establishment of the First International, followed by an in-depth survey and analysis of the international socialist and communist movements until the present day.

HIS 315. A MILITARY HISTORY OF WORLD WAR II. (3) An analytical and descriptive treatment of the major campaigns of World War II with emphasis upon the European theater of operations.

HIS 321. THE BYZANTINE EMPIRE (330 A.D.-1054 A.D.). (3) A study of the continuation of the Roman Empire from the establishment of Constantinople to the separation of Greek East and Latin West.

HIS 322. THE LATER BYZANTINE EMPIRE (1054-1453 A.D.). (3) A study of the struggle against Arab, Turk and Latin invaders; the Slavs, the role of Byzantium in relation to the economic revolution of Western Europe and to the Italian Renaissance.

HIS 329. DISEASE AND MEDICINE IN HISTORY. (3) The development of medical knowledge, trends in the techniques and availability of medical and psychiatric care, and the impact of disease and medicine on selected problems in world history.

HIS 332. SOUTH AFRICA. (3) A study of the major population groups of South Africa from earliest times to the present. Emphasis on the assertion and maintenance of European rule in the nineteenth and twentieth centuries.

HIS 333. EARLY AFRICAN HISTORY. (3) Major political, social, economic and religious developments in Sub-Saharan Africa from earliest times to the nineteenth century.

HIS 334. MODERN AFRICAN HISTORY. (3) Major developments in Sub-Saharan Africa from the nineteenth century to the present, with stress on the commercial and religious revolutions of the nineteenth century, the impact of colonial rule and the triumph of modern African nationalism.

HIS 335. THE EARLY HISTORY OF JAPAN. (3) The development of the Japanese people and state from the neolithic to the late

feudal period (17th century) with emphasis on the development of social institutions and values, Japanese Buddhism, Shinto, literature, and political and economic history.

HIS 336. CHINA IN REVOLUTION. (3) A study of the last 200 years of history with main emphasis on the history of the Chinese Revolution and the post-1949 developments.

HIS 337. HISTORY OF MODERN JAPAN. (3) The history of Japan from about 1600 to the present covering Japan's intellectual, social and economic transformation from an agricultural society to an industrial power.

HIS 338. THE WEST IN ASIA: IMPERIALISM, COLONIALISM AND MODERN NATIONALISM. (3) A study of Western expansion in Asia beginning with the East India companies and the early colonial empires of the sixteenth through eighteenth centuries with concentration on modern imperialism in the nineteenth and twentieth centuries.

HIS 340. HISTORY OF ARGENTINA. (3) A survey of Argentine history from the late colonial period to the present. Emphasis will be placed on changes in Argentine economic and social structures and their relation to political developments.

HIS 341. ASPECTS OF COLONIAL LATIN AMERICA. (3) This is a topics course that will treat selected specialized areas of colonial history on a rotational basis. It may be repeated for credit when the subject matter is changed. Topics will include: Spanish society, the Indian in Latin America, the city in Latin America, and the Eighteenth Century Revolution.

HIS 342. MEXICO AND CUBA IN THE 20TH CENTURY. (3) The social and economic forces leading to the revolutionary outbreaks of 1910 and 1953 and the political contexts in which they occurred. Special emphasis will be placed on post-revolutionary developments in each country.

HIS 343. THE UNITED STATES AND LATIN AMERICA. (3) A survey of the relations between the United States and Latin America. The course will analyze the growth of U.S. economic and political interest in Latin America and the impact of U.S. influence in that region.

HIS 345. TOPICS IN THE HISTORY OF SLAVERY. (3) This course will treat selected areas of the history of slavery. The course will be taught on a rotational basis by the department's Southern, Latin American and African historians. The course may be repeated for credit when the subject matter is changed.

HIS 349. INTRODUCTION TO HISTORIC PRESERVATION. (3) A systematic review and analysis of the techniques available in the United States to identify and preserve historically significant structures, buildings, sites, areas and objects.

HIS 350. TOPICS AND HONORS IN HISTORY. (3) Treatment of an historical topic. May be repeated for credit.

HIS 361. BRITAIN TO 1688. (3) Survey of British history with emphasis on institutional, cultural, economic, and imperial developments.

HIS 362. BRITAIN SINCE 1688. (3) Continuation of History 361 with some treatment of the British Empire.

HIS 367. FRANCE IN THE MODERN WORLD. (3) French social, political and cultural history from Waterloo to De Gaulle.

HIS 369. GERMANY SINCE 1850. (3) Unification, the Wilhelmine Empire, the Weimar Republic, the Third Reich and the two Germanies.

HIS 371. COLONIAL AMERICA. (3) Colonial history from the discoveries to 1763.

HIS 372. THE AMERICAN REVOLUTION AND EARLY NATION. (3) The achievement of independence and the formation of a national government, 1763-1800.

HIS 374. UNITED STATES IN CRISIS, 1824-1860. (3) A consideration of the new American nation in crisis. Attention is given to the development of nationalism under Jackson, the expansion of the new nation, the growth of sectionalism, and the events leading to secession.

HIS 375. CIVIL WAR AND RECONSTRUCTION, 1860-1877. (3) A study of the American people in war and the postwar adjustment. Emphasis is placed on the political, social and economic conditions of the North and South during the Civil War and Reconstruction period.

HIS 377. UNITED STATES IN THE TWENTIETH CENTURY, 1901-1932. (3) An intensive study of the political, economic, social and intellectual aspects of American democracy from 1901 to the Great Depression. Special emphasis on the impact of industrialization, American reform and the entry of the United States into the international arena.

HIS 378. UNITED STATES IN THE TWENTIETH CENTURY, 1932-PRESENT. (3) An intensive study of the political, economic, social and intellectual aspects of American democracy from the New Deal to the Great Society. Special emphasis on the New Deal and post-New Deal reform as well as America's role in world affairs.

HIS 379. HISTORY OF THE SOUTH TO 1865. (3) A survey of the South from colonial origins through the Civil War. Emphasis is placed on the political and cultural developments which ultimately led the South to secession and the creation of a distinct Southern nation in the confederacy.

HIS 380. HISTORY OF THE SOUTH SINCE 1865. (3) A survey of Southern history from Reconstruction to the present. Emphasis is placed on the political and cultural developments of the South and its attempt to maintain its biracial system. Attention is given to the development of the New South, the emergence of the Southern demagogue, the origins of segregation, and the region's attempt to deal with integration since 1954.

HIS 381. RADICALISM AND REFORM IN AMERICA. (3) A study of radical and reform efforts from the Revolutionary War to the present. Emphasis is placed on the development of the radical and reform traditions and their interaction through two centuries of American history.

HIS 383. URBAN HISTORY. (3) A one-semester introduction to recent concepts and research in U.S. urban history. The city as a physical place, as a socio-political environment, and as a cultural center. Emphasis is placed on the social developments caused by urbanization.

HIS 384. CRIME AND THE POLICE. (3) An emphasis upon the historical development of criminal behavior, criminal law, the criminal courts, the police and the penitentiary system. English origins are related to nineteenth and early twentieth century U.S. systems.

HIS 386. UNITED STATES FOREIGN RELATIONS, 1901-PRESENT. (3) A study of American diplomatic history from the administration of Theodore Roosevelt to the present. Special emphasis will be placed upon the interaction between domestic, economic, political and social changes and the formulation of American foreign policy.

HIS 389. HISTORY OF WOMEN IN AMERICA. (3) An examination of the changing experience, status, and role of women from colonial times to the present. Emphasis is placed upon two interrelated topics: woman's prescribed role as wife and mother and her consequent attempt to gain greater autonomy and broaden her sphere.

HIS 390. RELIGION IN AMERICAN HISTORY. (3) An historical examination of religious ideas and institutions. Emphasis is placed upon the development of religious freedom as a practice and an ideal, the interaction between the dominant tradition, Protestantism, and the Roman Catholic and Judaic traditions, and the response of these traditions to rapid industrialization and urbanization, and the general secularization of the society.

HIS 391. HISTORY OF NORTH CAROLINA. (3) Emphasis on the colonial developments and on the constitutional, educational and transportation developments of the ante-bellum period.

HIS 393. THE FRONTIER IN UNITED STATES HISTORY. (3) A study of the influence of the moving frontier line on the historical development of the United States. Emphasis will be placed on the

trans-Mississippi Western United States. For comparative purposes some consideration will be given to other world frontiers.

Courses for advanced undergraduates:

HIS 411. PROBLEMS IN HISTORY. (3) A colloquium designed around a problem in history, utilizing reading, discussion, reports and short papers. Topics vary within the fields of American, European, Latin American, African and Asian history. May be repeated for credit.

HIS 414. EARLY U.S. INTELLECTUAL HISTORY (3) Development of American social institutions and thought from the beginning to the Civil War. The course is conducted as a colloquium, combining lectures, discussions, extensive reading and oral reports, and a research paper by each student.

HIS 415. MODERN U.S. INTELLECTUAL HISTORY. (3) Continuation of HIS 414 from the Civil War to the present.

HIS 416. RECENT UNITED STATES RADICALISM. (3) Radical thought and action in the United States since 1890. Emphasis on Marxian-Socialism, Black and labor radicalism, radical women, and the new Left movement.

HIS 450. SENIOR HONORS THESIS. (3) Prerequisite: consent of the instructor. The preparation and presentation of an acceptable honors thesis or its equivalent.

HIS 490. THE NATURE OF HISTORICAL STUDY. (3) A course which examines the historian, his history, presuppositions, methods and objectives.

HIS 492. SEMINAR IN HISTORY. (3) Prerequisite: consent of the department. An intensive examination of a subject in history. May be repeated for credit.

HUMANITIES

HUM 301. THE MEANING OF DEATH. (3) An investigation into the experience of death in the western tradition. Study of selected philosophical, religious, existential, psychological and literary readings with a view of clarifying the conceptual problems involved in our ways of speaking about death. Explorations into the understanding of death as a horizon for understanding life.

HUM 350. TOPICS IN HUMANITIES. (3) (May be repeated for credit with consent of the student's major department.) Prerequisite: junior standing and consent of the sponsoring departments. Topics chosen from the general area of the humanities in order to demonstrate relationships and interdisciplinary influences.

HUM 450. NON-RESIDENTIAL STUDIES. (1 to 15 hours). Experience outside the University arranged cooperatively by the student and his major department in the College of Humanities for the

purpose of applying, extending, adding to, or elaborating the student's studies in his major. (All arrangements must be approved prior to the student's embarking on the study. Such arrangements will include a written proposal of the goals, methods, duration, hours-credit, and evaluation of the project.) To be developed, approved, supervised and evaluated by the student's major department (with the cooperation of others as appropriate). Grading may be on a pass/fail basis. Ordinarily to be taken no earlier than the junior year. No more than 15 hours of Non-Residential studies may be presented by a student.

DEPARTMENT OF PHILOSOPHY

Chairman: Professor Shumaker
Professor: Fishman
Associate Professor: Lincourt
Assistant Professors: Cook, Presler, Toenjes
Instructor: Enrich

A major in philosophy consists of a minimum of 28 semester hours in philosophy and includes courses 201, 205, 311, 313 and two senior seminars. Additional work is to be chosen from other philosophy offerings.

Required related work consists of 15 hours, such work to be chosen in consultation with the department representative or adviser. Students contemplating graduate study in philosophy are encouraged to undertake related work in the natural or physical sciences and to develop reading proficiency in German and French.

COURSE DESCRIPTIONS

PHILOSOPHY

PHI 201. INTRODUCTION TO PHILOSOPHY. (3) An introduction to some of the basic concepts and problems of philosophy. Typical problems are freedom and determinism, mind-body interaction, the status of moral judgments and the problem of perception. Readings from the works of representative philosophers both classical and contemporary.

PHI 205. DEDUCTIVE LOGIC. (3) A first course in the general principles of deductive logic, both classical and symbolic, with emphasis on the use of formal logic in analysis of ordinary language discourse.

PHI 311. ANCIENT PHILOSOPHY. (3) Prerequisite: PHI 201 or junior standing. An inquiry into the history of Western intellectual and philosophic thought from the early Greeks to the post-Aristotelian period. Readings from the pre-Socratics, Plato, Aristotle, Epicureans, Stoics, Skeptics and Neoplatonists.

PHI 312. MEDIEVAL PHILOSOPHY. (3) Prerequisite: PHI 201. An investigation of the Western philosophical tradition from Augustine to William of Ockham. Readings and discussions will cover such other authors as Anselm of Canterbury, Bonaventure, Thomas Aquinas, and Duns Scotus.

PHI 313. MODERN PHILOSOPHY FROM DESCARTES TO KANT. (3) Prerequisite: PHI 201 or junior standing. An inquiry into the development of modern philosophic and scientific thought. Readings selected from respective works in the seventeenth to the nineteenth centuries.

PHI 314. CONTEMPORARY PHILOSOPHY. (3) Prerequisite: PHI 201. A study of the main movements and problems of contemporary philosophy: pragmatism, logical positivism, linguistic analysis, existentialism.

PHI 317. AMERICAN PHILOSOPHY. (3) Prerequisite: PHI 201 or junior standing or consent of the instructor. A survey of European philosophic movements which had counterparts in American thought, leading to distinctively American Pragmatism, Realism and Humanism. Readings from contemporary American philosophers.

PHI 321. ETHICS. (3) A study of the development of ethical thought in ancient and modern times, with special references to present day ethical problems. Readings selected from classical and contemporary sources.

PHI 323. EXISTENTIALISM. (3) Prerequisite: PHI 201 or consent of instructor. A study of themes and concepts central to the existentialist tradition in philosophy and literature. Investigations will focus on such issues as: Authenticity, Absurdity, Death, Anguish, Guilt, Forlornness, Freedom and the Limits of Reason.

PHI 325. AESTHETICS. (3) Prerequisite: PHI 201 or junior standing. A study of the major theories of art, including readings from Aristotle, Kant, Nietzsche, Santayana, Collingwood, Croce and Dewey. Emphasis is on the following categories: expression, criticism, the work of art, the creative process.

PHI 335. ADVANCED LOGIC. (3) Prerequisite: PHI 205. A study of advanced systems of logic, with emphasis upon symbolic logic. The main stress will be placed upon formal systematic characteristics such as axiomatics and proof techniques.

PHI 347. PHILOSOPHY OF SCIENCE. (3) Prerequisite: PHI 201 or 205 or consent of instructor. A philosophical investigation, *via* critical study and group discussion, of epistemological, methodological, metaphysical, interdisciplinary, and metadisciplinary issues arising out of science. "Science" is here construed very broadly so as to imply a strong connection with all systematic inquiry, either past or present, into natural or social questions.

PHI 350. TOPICS. (3) May be repeated for additional credit with the approval of the department. Prerequisite: consent of the department. Topics chosen from specific areas in philosophy such as symbolic logic, philosophy of science, freedom and determinism, philosophy in literature, detailed study of significant philosophic movements or detailed study of the works of individual philosophers.

PHI 360. MAJOR FIGURE IN PHILOSOPHY. (3) Prerequisite: consent of instructor. An indepth investigation into the thoughts and writings of a major figure in philosophy. Special emphasis will be on primary resources. Included will be 369A - Plato, 360B - Aristotle, 360C - Descartes, 360D - Kant, and others as necessitated by departmental needs and interests.

PHI 365. THEORY OF KNOWLEDGE. (3) Prerequisite: PHI 201. An analysis of the concepts of meaning, belief, knowledge, truth and discussion of the analytic-synthetic distinction. Readings from historical and contemporary sources.

PHI 375. METAPHYSICS. (3) Prerequisite: PHI 201. An investigation of the history of metaphysics, focusing on the concept of experience. Authors to be discussed include Aristotle, Hume, Lewis, Hegel, James Peirce, Dewey and Whitehead.

PHI 401. PHILOSOPHY OF RELIGION. (3) Prerequisites: PHI 201 and junior standing. A discussion of the philosophical implications of religious experience. The definitions, development and diverse forms of the problems of belief and reason in modern thought.

PHI 402. PHILOSOPHY OF THE EAST. (3) Prerequisite: six hours of philosophy. A survey of thought in the East from ancient to modern times. Special emphasis on the philosophical concepts of Hinduism, Buddhism, Confucianism and Taoism.

PHI 445. PHILOSOPHY OF MIND. (3) Prerequisite: PHI 201. A study of the conceptual issues in the mind body problem and the problem of other minds. Analysis of concepts of intention, motivation, consciousness, imagination and emotion.

PHI 491. SEMINAR. (2) Prerequisite: consent of the department. Individual or group inquiry into selected philosophic problems. Exposition and discussion of the results.

PHI 492. SEMINAR. (2) Prerequisite: consent of the department. A continuation of PHI 491.

DEPARTMENT OF RELIGIOUS STUDIES

Chairman: Professor Underwood
Professor: Witherspoon
Associate Professor: St. Clair
Assistant Professors: Gestwicki, Meyer, Thomas
Instructor: White

A student may satisfy the requirements for a major in religious studies after completing nine hours in the area of Introductory Religious Studies (normally including Religion 203 and 204) in one of the two following programs:

(A) *Course program in religious studies:* A student who elects this option will satisfy the requirements for a major in religious studies by completing a minimum of 18 hours of upper-level religious studies courses with at least one course from each of the areas of Eastern Religious Thought, Judeo-Christian Thought, and Religion and Culture.

(B) *Interdisciplinary program in religious studies:* This option is intended to provide a course of studies which will make maximum use of the interdisciplinary aspects inherent in religious studies. Before the beginning of the junior year, a student may submit a proposal for a program of study for his junior and senior years. If the proposal is approved by the department, the student will satisfy the requirement for a major in religious studies by completing his approved program rather than by taking any specified number of religious studies courses. This is not an honors program and any student may submit a proposal to the department. A detailed description of this program may be obtained at the departmental office.

COURSE DESCRIPTIONS

RELIGIOUS STUDIES

Introductory Religious Studies

Religious Studies 201, 202, 203 and 204 are separate courses and may be taken in any order without prerequisite.

REL 201. HEBREW RELIGIOUS THOUGHT. (3) An introduction to the Hebrew religious tradition from the perspective of its development in the culture of the ancient Near East and from the perspective of its subsequent impact on Western culture. Analysis of selected Hebrew Scriptures and other writings from the Jewish tradition in English translation.

REL 202. ORIGINS OF CHRISTIANITY. (3) A study of the emergence of Christianity in its cultural context. Analysis of selected early Christian writings in English translation.

REL 203. EASTERN RELIGIONS. (3) An introduction to selected religions of the East such as Islam, Hinduism, Buddhism, Chinese and Japanese religions. Special emphasis on their world views as expressed in the functional use of myth and symbol in the traditions.

REL 204. RELIGION AND CONTEMPORARY CULTURE. (3) An introduction to the critical study of the religious dimension of human existence. Attention given to the function of myth, symbol and artistic imagination in the development of religious sensibilities and to the impact of modern scientific and cultural forms on contemporary religious thought and action.

Eastern Religions

REL 311. HINDUISM. (3) Prerequisite: REL 203 or consent of the instructor. A study of the ancient Vedic traditions and the development of Hinduism. Emphasis placed on the role of Hinduism in the development of Indian civilization.

REL 312. BUDDHISM. (3) Prerequisite: REL 203 or consent of the instructor. The historical development of Buddhism with special attention given to its diverse manifestations in South Asia.

REL 313. TAOISM. (3) A study of Chinese religious traditions, concentrating on Taoism in its philosophical formulations (Lao Tzu, Chuang Tzu) as well as its development in meditation, yoga, alchemy and ritual orthodoxy.

REL 314. ISLAM. (3) Prerequisite: REL 203 or consent of the instructor. A study of the development of the traditions in Islam with special emphasis on Islamic culture, literature and mysticism.

REL 315. VISUAL MYSTERIES OF INDIA. (3) Prerequisites: REL 203 or consent of instructor. A study of the visual expressions of Hindus, Buddhists, Jainas and Muslims in the caves, temples, paintings and sculptures of India. Discussions include a historical study of various types of art, the moods these visual images express and create in the worshipper, the nature of illusion in Indian religious imagery and the ideas of Indian aesthetics.

REL 316. ZEN BUDDHISM. (3) A study of Buddhist origins in India, development of the Ch'an (Zen) School in China and Japan, with special emphasis on the formative influences of Zen on Japanese art and culture.

REL 411. TIBETAN RELIGION. (3) Prerequisite: REL 203 or consent of instructor. A study of the symbols, beliefs and practices of the Tibetan tradition, which grew out of the fusion of the ancient native religion and Buddhism.

REL 419. SEMINAR: EASTERN RELIGIONS. (3) Prerequisite: consent of instructor. An intensive investigation of a special topic in the area of Eastern religions.

Judeo-Christian Thought

REL 321. HEBREW PROPHETIC RELIGION. (3) Prerequisite: REL 201 or consent of the instructor. The historical development of the prophetic movement from its origins to its culmination in the classical prophets of the eighth to the sixth centuries B.C. Emphasis placed on the contributions of the prophets to their own day and their significance for contemporary religious thought.

REL 322. THE PSALMS AND WISDOM LITERATURE OF ISRAEL. (3) Prerequisite: REL 201 or consent of the instructor. A study of the origin and content of the Psalms and a study of the place of wisdom literature in the development of Hebrew thought.

REL 324. CHRISTIAN ORIGINS: JESUS. (3) Prerequisite: REL 202 or consent of the instructor. An intensive study of the synoptic gospels for an understanding of Jesus and the religion he taught.

REL 325. CHRISTIAN ORIGINS: PAUL. (3) Prerequisite: REL 202 or consent of the instructor. A detailed analysis of the Pauline corpus. Particular reference is made to the occasion, purpose and significance of each letter for the emerging Christian community.

REL 327. JUDAISM. (3) Prerequisite: junior standing or consent of the instructor. A systematic survey of the development of Jewish religious thought from the Middle Ages to the present. Reading from Maimonides, Buber and others.

REL 328. MODERN CHRISTIAN THOUGHT. (3) Prerequisite: junior standing or consent of the instructor. A study of the contributions of the major creative thinkers who have interpreted the Christian tradition in the context of the modern world. Readings selected from such figures as Schleiermacher, Kierkegaard, Barth, Tillich, Rahner and Ong.

REL 329. CHRISTIANITY THROUGH ART AND ARCHITECTURE. (3) A survey course covering Christian history from the catacombs to the 20th century. Focus is on those issues which are manifest in a study of religious expression in pictorial art, architecture and sculpture.

REL 429. SEMINAR: JUDEO-CHRISTIAN THOUGHT. (3) Prerequisite: consent of the instructor. An intensive investigation of a special topic in the area of Judeo-Christian thought.

Religion and Culture

REL 331. RELIGION IN AMERICAN CULTURE. (3) An inquiry into the role of religion in the shaping of American culture.

REL 332. CONTEMPORARY BLACK RELIGION IN AMERICA. (3) An examination of the tenets of Black religion since World War II, with particular emphasis on the influence of religion and

religious leaders in the struggle for a Black humanity. This course will analyze the religious experience of Black Americans in the mid-20th century. Special attention will be given to 1) the origins of Black Religion and the Black Church, 2) Black Islam, 3) Black Christianity and 4) the development of a Black religious perspective.

REL 333. SCIENCE, TECHNOLOGY AND HUMAN VISION. (3) Study of the impact of science and technology on the way we see ourselves and the world. Attention given to such topics as the relationship of science and religion, the place of the individual in a technological society and the visions of the scientific future.

REL 334. RELIGION AND LITERARY IMAGINATION. (3) Prerequisite: junior standing. An investigation of some enduring problems of religious thought and action as they have been expressed, directly and indirectly, in selected works of contemporary literature.

REL 335. THE LIMITS OF LANGUAGE. (3) An examination of the adequacy of language to function as the symbolic framework for reflecting on the ultimate questions of human existence. Language studied in its boundary situations—first, at the boundaries where non-verbal, pre-reflective meaning which is rooted in the body crosses over to the verbal, reflective level of language; second, at the boundaries where language is forced beyond its ordinary uses in attempts to speak of meaning beyond language.

REL 336. VISUAL SYMBOLS OF THE HUMAN SPIRIT. (3) An examination of the role of the visual arts in the development of the human spirit. A brief study of art in traditional religions followed by an emphasis on the erosion of the traditional symbols and the attending movement of art away from traditional religious subject matter. Course concludes with an investigation of modern art in an attempt to reflect on the meaning of the visual symbols which are informing our contemporary imagination.

REL 337. RELIGIOUS ODYSSEY IN MODERN FILM. (3) Major foreign and American films made after World War II seen and discussed in terms of what they reflect about the ultimate concerns of contemporary western culture and what this implies for today's thinking in religion.

REL 338. DREAMS AND RELIGIOUS IDENTITY. (3) Begins by learning how to understand our private dreams. Analogies with the process of dreaming explored at the public or cultural level of "dreaming" as in artworks and especially at the level of religious experience and expression as in symbols and myths.

REL 339. PRIMITIVE RELIGIONS. (3) A discussion of the evidence for the religious conceptions of pre-historic man, painting, sculpture, artifacts, burial practices, etc. A study of two or three selected examples of tribal religion in the modern period, taken from paleolithic and neolithic levels of culture.

REL 342. THE RELIGIOUS PERSONALITY. (3) Based on the personal documents (diaries, journals and autobiographies) of

religious individuals. Documents studied in terms of their psychological, literary and historical implications.

REL 344. GREEK MYTHS AND RELIGIONS. (3) A study of gods and goddesses, heroes and heroines in ancient Greek myths and religions. Greek myth and later Western religions. Polytheism and monotheism. Functions of myth. Contemporary interpretations of Greek myth.

REL 345. JUNG AND RELIGION. (3) A study of the works of C. G. Jung as they relate to an understanding of religion and religious experience. Emphasis on his interpretations of myths and symbols as they appear in both Western and non-Western religions. His theories of creativity and the arts, religious expression and quests for meaning.

REL 431. PHILOSOPHY OF RELIGION. (3) Prerequisites: PHI 201 and junior standing (same as PHI 401).

REL 432. RELIGION AND MODERN THOUGHT. (3) Prerequisite: consent of the instructor. An intensive analysis of selected issues which stem from the interaction of modern thought and modern religious sensibilities.

REL 433. AMERICAN INDIAN RELIGIONS. (3) Prerequisite: consent of the instructor. A study of the myths and rituals of the American Indians with special attention to an understanding of the function of myth in defining world views and rituals as visual enactment of and involvement in those views.

REL 439. SEMINAR: RELIGION AND CULTURE. (3) Prerequisite: consent of the instructor. An intensive investigation of a special topic in the area of religion and culture.

Special Studies

REL 350. TOPICS IN RELIGION. (3) Prerequisite: consent of the instructor. May be repeated for credit. Treatment of a special topic in religious studies.

REL 450. TOPICS IN RELIGION. (3) May be repeated for credit. Prerequisite: consent of the department. Topics are to be chosen from the areas of religion specifically relating to contemporary issues in theology and religion and religious thought of non-Judeo-Christian religion.

REL 490. INDEPENDENT STUDIES. (1 to 3) Prerequisite: consent of department. May be repeated for credit. Individual investigation and appropriate exposition of the results.

College of Nursing

Dean: Professor Schlachter
Dean Emeritus: Brocker
Professors: Caddell, Jernigan
Associate Professors: Haynes, Leonard, Mauldin, Nicholson, Smith
Assistant Professors: Campbell, Chitty, Davenport-Cook, Harvey, Head, King, Maynard, Morgan, Norris, Sanders, Stitt
Instructors: Andrews, Doyle, Lawrence, Smith, Whitlock
Lecturers: Baptiste, Howell, Reed

The College of Nursing derives its purpose from the purposes of the University of North Carolina at Charlotte and affirms its intention to teach nursing, to participate in the search for truth and to serve those who are concerned about the health care of the citizens of North Carolina, the nation and the world. The purpose of the College of Nursing is to prepare a family health nurse who is a generalist, capable of:

1. providing nursing care for members of families in various settings;
2. functioning as a change agent and a leader in the promotion of health; and
3. advancing through further education at the graduate level.

Philosophy

The College of Nursing sees itself as a workshop in humanity—a place within the University where persons who meet admission requirements, without consideration of race, creed, sex or belief, may come to study in an atmosphere that encourages the process of learning. The faculty believe that in this workshop both faculty and students can seize opportune moments and life experiences so that they discover together how to learn continuously and creatively and how to find one's own way to contribute to the world community as an educated person with social and colleague responsibilities.

Learning is seen as the development of competencies necessary for self-analysis, value judgments, choice evaluation and behavioral changes. The faculty believe that professional nursing education belongs in a university setting. This environment provides opportunities for intellectually curious and capable students to develop their individual potentialities and integrate learnings from the arts and sciences as they acquire nursing knowledge.

The faculty believe that nursing is a profession with responsibilities and privileges, concerned with the promotion, maintenance and restoration of optimal health as well as providing supportive care when death is imminent. We hold that nursing helps to fulfill a universal need for health care services and that the uniqueness of nursing is found in the ways in which these services are performed.

We further believe that nursing is an important social force which makes an essential contribution to the total health program of society.

The curriculum of the college is designed to prepare a Family Health Nurse who is a generalist, capable of providing nursing care for members of families in various settings. The Family Health Nurse utilizes the nursing process, which is defined by this faculty as assessing, planning, implementing and evaluating. This process is deliberative, interactive, scientifically based, and devoted to helping individuals, families and groups make maximum use of their internal and environmental resources in meeting their respective health needs. In providing care the Family Health Nurse acts in dependent, independent and collaborative roles.

The Family Health Nurse utilizes concepts and principles of health, developmental theories, hierarchy of needs, and interpersonal theories in assisting the family and/or family member in maintaining or regaining optimal health. The family is seen as a natural unit in which socialization of man occurs. A change in the health status of one family member influences the total family relationships and conversely, the family influences individual health. Health is viewed as a dynamic state in which there is a constant striving by man for homeostasis while interacting with biophycho-social influences.

Expanding knowledge in all fields of health, an increasingly better educated public, new systems for delivery of health care and changing attitudes toward health will bring about different expectations of the professional nurse in the future. Universal opinion places the importance of man's knowledge of ecological factors in sharp focus; therefore, the Family Health Nurse must be able to facilitate understanding of how man influences his environment and his environment influences his health. The faculty believe the Family Health Nurse can be a change agent by assuming a more independent role in assessing and in meeting society's health needs.

The faculty believe that upon graduation the Family Health Nurse has acquired a sound foundation for leadership, advanced study and research and will assume responsibility for continued intellectual and personal growth.

Objectives

In a setting designed to foster inquiry and discovery, the curriculum leading to a Bachelor of Science degree with a major in nursing is planned through a continuum of learning experiences to prepare a Family Health Nurse who will:

1. utilize the nursing process with the family and its members to promote, maintain, and restore optimal health;

2. utilize appropriate nursing roles in supporting the health of the family and its members in a variety of community settings;

3. utilize knowledge of developmental theories to assist the family and its members in achieving an optimal level of health;

4. utilize knowledge of interpersonal theories to promote therapeutic and colleague relationships;

5. demonstrate movement toward self-actualization by evaluating his own behaviors and striving for personal and professional growth;

6. function as a change agent and a leader in the promotion of health of the family, the community and society;

7. contribute to nursing knowledge through critiquing, participating in, and utilizing scientific investigation;

8. be capable of advancing through further education at the graduate level.

The Bachelor of Science degree with a major in Nursing is comprised of 120 semester hours credit, 54 of which are in the nursing major. This allocation of credit for nursing courses takes into consideration the student's needs for: 1) a strong general education base (50 semester hours) to complement and support the nursing major; 2) an opportunity to pursue within the University electives (16) semester hours which add to his portfolio of learning in terms of personal and professional interests; and 3) time to participate in campus activities and creative pursuits.

Nursing and general education courses are arranged so that there is a continual interchange of theory and practice. The curriculum of the College of Nursing proceeds in a series of planned sequential learning experiences that involve the student in the teaching-learning process and permit development of the intellectual processes of inquiry, analysis synthesis, and creativity.

Admission to the program requires, in addition to admission to the University, an interview with a member of the College of Nursing faculty. The interview is an information-giving time structured to allow for questions and answers about the program.

Requirements for Progression in the Nursing Program

In order to promote the progression of safe practitioners from one level to the next within the College of Nursing and eventually into the nursing profession, students

1. must achieve a minimum grade of *C* in *each nursing course.*

   a. Course grades reflect combined theoretical and clinical performance, neither component of which must be less than *C.*

   b. Only four hours of *D* credit in a natural science is acceptable for credit by the College of Nursing.

2. may not repeat a nursing course more than once. If a student repeats a nursing course and does not achieve a minimum of *C*, she will be asked to withdraw from the College of Nursing.

3. may not progress to the next level in the nursing curriculum until the prerequisite nursing courses have been completed.

4. may not attempt junior level nursing courses until Sociology 151, a Sociology or Anthropology elective, Psychology 101, Biology 101, 203, 205 and Chemistry 103 and 104 and sophomore level nursing courses have been completed and a 2.0 QPR has been earned, overall as well as a 2.0 QPR in the Nursing major.

5. may not attempt senior level nursing courses until all junior level nursing courses have been completed, including Psychology 307 and a 2.0 QPR has been earned, overall, as well as a 2.0 QPR in the Nursing major.

6. A student must achieve a 2.0 QPR in the nursing major to graduate.

7. Student may receive *I* in accordance with policy stated in UNCC *Catalog* when confronted with personal or family crises.

CURRICULAR REQUIREMENTS FOR THE BACHELOR OF SCIENCE DEGREE WITH A MAJOR IN NURSING

Freshman Year

English 101	3	English 102	3
Math/Language	3-4	Math/Language	3-4
Biology 101	4	Nursing 102	3
Chemistry 103	4	Chemistry 104	4
		Sociology 151	3
	14-15		16-17

Sophomore Year

Nursing 201	4	Nursing 202	4
Nursing 203	2	Nursing 204	2
Biology 203	4	Biology 205	4
Sociology or Anthropology	3	Electives	6-8
Psychology 101	3		
	16		16-18

Junior Year

Nursing 301-A	4	Nursing 301-B	4
Nursing 302	4	Nursing 303	4
Psychology 307	3	Electives	6
Elective	3		14
	14		

Senior Year

Nursing 401	5	Nursing 402	5
Nursing 403	5	Nursing 404	4
Nursing 491	2	Nursing 492	2
Elective	3	Elective	3
	15		14

COURSE DESCRIPTIONS

NURSING

NUR 102. ECOLOGY OF MAN. (3) The focus of the course is directed toward understanding the relationship of selected environmental and social factors to man's health and the meaning of health and illness to the individual, his family and the community. Major health problems are explored along with a wide variety of facilities society provides for meeting health needs and solving health problems. Current trends in providing health care, including the individual's entry into the health care system, are also discussed.

NUR 201. FUNDAMENTALS OF NURSING I. (4) Prerequisites: NUR 102, CHE 103 and 104, BIO 101, SOC 151 or PSY 101, and sophomore standing. Corequisites: BIO 203 or 205 and SOC or ANT elective. The focus of this course is the nursing process, with emphasis on the assessment of the individual and his family to determine their physical and psychosocial needs. Basic principles and concepts essential for nursing care are introduced. Study of the well individual enhances the students' understanding of human development, behavior and aging.

NUR 202. FUNDAMENTALS OF NURSING II. (4) Prerequisites: NUR 201, 203. Corequisites: BIO 203 or 205, SOC or ANT elective. This course focuses on the planning and implementation phases of the nursing process in providing family-centered care. Students increase their knowledge and use of therapeutic techniques in assisting well and ill individuals.

NUR 203. NURSING CONCEPTS SEMINAR I. (2) Corequisite: NUR 201. An examination of selected basic concepts in contemporary nursing including: professional nursing roles; roles of the Family Health Nurse in a variety of health care settings; the concept of health; and principles of communication theory and interviewing. Maintenance of health in the individual constitutes the primary framework within which these concepts are studied. Special emphasis is placed upon self-awareness as a basis for effective one-to-one interaction.

NUR 204. NURSING CONCEPTS SEMINAR II. (2) Corequisite: NUR 202. A continuation of NUR 203 in which additional basic concepts in contemporary nursing are examined, including: health care delivery systems; application of change theory to health care systems; utilization of the research process; and characteristics of the

various levels of nursing education and nursing practice. Basic components of group theory and process are explored within the seminar setting.

NUR 205. NUTRITION IN HEALTH AND DISEASE. (3) Prerequisites: NUR 201 for nursing majors; two semesters of biology, chemistry and/or physics for non-nursing majors; or permission of the instructor. A practical understanding of the ways the body handles food from birth through the life cycle to obtain and utilize nutrients for the metabolic needs of health maintenance, growth and added stresses of pregnancy and disease. Normal nutrition will be the main focus. Social and psychological gatekeepers of good nutrition that include childhood eating habits, fads, cultural values, food processing and merchandising methods will be examined.

NUR 301-A. NURSING OF THE ADULT FAMILY MEMBER I. (3) Prerequisites: junior standing; NUR 102, 201, 202, 203, 204; completion of sophomore pre- and corequisites. Corequisites: NUR 302 or NUR 303, PSY 307. This course emphasizes the response of the adult and his family to illness, presenting content in a problem oriented manner. The course focuses on utilization of the nursing process in restoring the adult to an optimal level of wellness, pathophysiology and medical-surgical therapy serving as a basis for planning and implementing appropriate nursing care.

NUR 301-B. NURSING OF THE ADULT FAMILY MEMBER II. (4) A continuation of NUR 301-A.

NUR 302. NURSING OF THE CHILDBEARING FAMILY. (4) Prerequisites: junior standing, NUR 201, 202, 203, 204; completion of sophomore pre- and corequisites. Corequisites: NUR 301-A or 301-B, PSY 307. This course is designed to enable the family health nurse student to utilize the nursing process in provision of care to the childbearing family. The focus is on growth and development of each family member along the wellness-illness continuum during this period.

NUR 303. NURSING OF THE CHILD REARING FAMILY. (4) Prerequisites: junior standing; NUR 201, 202, 203, 204; completion of sophomore pre- and corequisites. Corequisites: NUR 301-A or 301-B, PSY 307. This course enables the student to understand the basic concepts of patient care with emphasis on the childbearing family from infancy through the adolescent period. The student utilizes biopsychosocial principles in applying the nursing process as he provides total nursing care for the child and his family along the wellness-illness continuum.

NUR 401. MENTAL HEALTH NURSING. (5) Prerequisites: completion of all required courses below the 400 level. This course is designed to assist the student in exploring and understanding the dynamics of interpersonal relationships as adaptive and maladaptive processes in individuals, families and groups. Emphasis is placed upon the development of awareness of personal behavior and its effect on the client relationship. Building on classical and current

theory in psychology, sociology and physiology, content emphasis is on assisting the student in identifying, adapting, implementing and evaluating theoretical constructs which are most appropriate to 1) the learner's potential and 2) the client's need. The student works in hospital and community settings as he applies the nursing process to selected client relationships.

NUR 402. NURSING OF THE ADULT FAMILY MEMBER III. (5) Prerequisites: completion of all required courses below the 400 level. This course is designed to further the student's knowledge of and skill in providing care for adult family members who are acutely or critically ill. Emphasis is placed on the pathophysiological alterations in cardiovascular-respiratory functions and the impact which these changes have on an individual and his family. Opportunities are provided for independent decision making in applying the nursing process in such specialized areas as acute coronary care, post-operative intensive care and emergency room.

NUR 403. COMMUNITY HEALTH NURSING. (5) Prerequisites: completion of all required courses below the 400 level. This course is designed to assist the student in utilizing communication and interpersonal skills in family-centered and community settings; understanding the nursing process in promotion of high-level wellness and health maintenance for families and communities; understanding professional responsibility as a health team member in an interdisciplinary approach to family and community health, utilizing knowledge of community health theory in evaluating the health care for individuals, families and communities; and relating community health and community health nursing to current practice and trends to health care.

NUR 404. MANAGEMENT OF PATIENT CARE. (4) Prerequisites: completion of all required courses below the 400 level. The focus of this course is on the assessment of an existing health care unit in relation to industrial and professional models of practice and management, the assumption of responsibility for health care within the framework of the unit; and the determination of ways to improve care and plan for change.

NUR 490. TOPICS IN NURSING. (3) Prerequisites: consent of the college. Topics to be chosen from the specialties of nursing.

NUR 491. RESEARCH IN NURSING I. (2) Prerequisites: completion of all required courses below the 400 level. Introduction to research in nursing. The student reviews and critiques studies from nursing and related areas and develops a preliminary proposal.

NUR 492. RESEARCH IN NURSING II. (2) Prerequisite: NUR 491. This course provides opportunity for the student to study a nursing problem using the research method.

College of Science and Mathematics

Dean: Charles H. Stone Professor Burson

The College of Science and Mathematics includes the Departments of Biology, Chemistry, Mathematics and Physics.

DEPARTMENT OF BIOLOGY

Chairman: Professor Arvey
Professors: Hildreth, Hogan, Matthews, Menhinick
Associate Professors: Edwards, Ostrowski
Assistant Professors: Barden, Bashor, Brown, Butts, Johnson, Mellichamp, Oliver, Phillis, Travis
Professor Emeritus: Hechenbleikner
Lecturers: Diebolt, Cockerham

A major in biology leading to the B.A. degree consists of 32 semester hours of biology including Biology 211, 221, 231, 491 and one course each in three areas to be chosen from development, ecology, genetics and physiology. A minimum of five laboratory courses in biology is required. Additional requirements are 12 semester hours of chemistry with associated labs, including Chemistry 101 and 102; and six semester hours of mathematics.

Each biology major must show a proficiency through the second semester freshman level of a foreign language either by satisfactory completion of courses 101 and 102 in the language or by achieving a satisfactory score on an appropriate test. Students contemplating attending graduate school are strongly recommended to gain a proficiency in French, German or Russian.

In addition to the requirements for the B.A. degree, a student wishing to receive the B.S. degree is required to take eight additional hours in biology, for a total of 40 hours; Chemistry 231 and 232, with associated labs, in place of the chemistry elective; Physics 101 and 102, and three additional hours of mathematics (MAT 122 or CSC 100 is suggested).

SUGGESTED CURRICULUM FOR THE B.A. DEGREE IN BIOLOGY

Freshman Year

Chemistry 101, 101L	4	English 102	3
English 101	3	Biology 211	4
Mathematics 103	3	Chemistry 102, 102L	4
Electives	6-7	Mathematics or Computer Science Elective	3
		Electives	3-4
	16-17		17-18

Sophomore Year

Biology 221	4	Biology 231	4
Chemistry elective	4	Electives	9-12
Electives	6-9		
	14-17		13-16

Junior Year

Biology electives	8	Biology electives	8
Electives	6-9	Electives	6-9
	14-17		14-17

Senior Year

Biology 491	1	Electives	15
Biology elective	4		
Electives	9-12		
	14-17		15

SUGGESTED CURRICULUM FOR THE B.S. DEGREE IN BIOLOGY

Freshman Year

Chemistry 101, 101L	4	Biology 211	4
English 101	3	Chemistry 102, 102L	4
Mathematics 103	3	English 102	3
Electives	6-7	Mathematics 120 or 141 or Computer Science	3
		Electives	3-4
	16-17		17-18

Sophomore Year

Biology 221	4	Biology 231	4
Chemistry 231, 231L	4	Chemistry 232, 232L	4
Mathematics 122 or 142 or Computer Science	3	Electives	6-9
Electives	3-6		
	14-17		14-17

Junior Year

Biology elective	4	Biology elective	8
Physics 101	4	Physics 102	4
Electives	6-9	Electives	3-6
	14-17		15-18

Senior Year

Biology electives	8	Biology 491	1
Electives	6-9	Biology electives	8
		Electives	6
	14-17		15

*B.A. IN BIOLOGY WITH AN OPTION IN MEDICAL TECHNOLOGY**

A student may complete the departmental requirements for the B.A. degree in Biology in three years. Upon satisfactory completion of training in medical technology at a school of medical technology, which has been approved by the National Registry of Clinical Pathologists and UNCC, the student may receive a B.A. degree in Biology from UNCC.* Gaining admission to an approved school of medical technology is the responsibility of the student. A maximum of 30 hours will be accepted from the school of medical technology. Up to eight hours may be applied toward the requirements for the major in biology. The student must take one course in two of the areas required for the biology major, and have at least a 2.0 average overall and in the major at the end of the junior year. The final 30 hours counted toward the degree and the last 12 hours counted toward the major prior to entering a school of medical technology must be taken at UNCC. The student may obtain information from his departmental adviser concerning these specific schools of medical technology cooperating with UNCC in this program.

*It is possible to obtain a B.S. degree in biology by careful planning with the adviser.

Freshman Year

Biology 211	4	Biology 221	4
Chemistry 101, 101L	4	Chemistry 102, 102L	4
Mathematics 101 or 103	3	Mathematics elective	3
English 101	3	English 102	3
Electives	3	Elective	3
	17		17

Sophomore Year

Biology 231	4	Biology 331	3-4
Chemistry 231, 231L	4	Chemistry elective	4
Electives	6-7	Electives	7-8
	14-15		14-16

Junior Year

Biology 311	4	Biology 491	1
Biology elective	3-4	Biology 473	3-4
Electives	7-8	Electives	10-12
	14-16		14-16

Senior Year

At an approved School of Medical Technology

COURSE DESCRIPTIONS

BIOLOGY

BIO 101. PRINCIPLES OF BIOLOGY. (4) Recommended as a general university elective, without credit toward the major. Fundamental principles of life. Audio-tutorial presentation. Equivalent to three lecture hours and one laboratory period of two hours a week.

BIO 203. BACTERIOLOGY. (3) Prerequisites: one semester of biology and one semester of chemistry. No credit toward a biology major. Basic physiology of bacteria and viruses, with emphasis on the pathogens and the epidemiology of microbial diseases. Three lecture hours a week.

BIO 203L. BACTERIOLOGY LABORATORY. (1) Prerequisite or corequisite: BIO 203. One laboratory period of three hours a week.

BIO 205. HUMAN ANATOMY AND PHYSIOLOGY. (3) Prerequisite: one semester of biology and one year of high school chemistry or one semester of college chemistry. No credit toward a

*It is possible to obtain a B.S. degree in biology by careful planning with the adviser.

biology major. Basic fundamentals of the anatomy and physiology of the human body as an integrated unit. Three lecture hours a week.

BIO 205L. HUMAN ANATOMY AND PHYSIOLOGY LABORATORY. (1) Prerequisite or corequisite: BIO 205. One laboratory period of three hours a week.

BIO 211. PLANT BIOLOGY. (4) Prerequisite: open to majors and non-majors; one course in biology prerequisite for non-majors. The morphology, function, reproduction, phylogeny and ecology of plants. Three lecture hours and one laboratory period of three hours a week.

BIO 221. ANIMAL BIOLOGY. (4) Prerequisite: open to majors and non-majors; one course in biology prerequisite for non-majors. The morphology, function, development, phylogeny and ecology of the principle invertebrate and vertebrate types. Three lecture hours and one laboratory period of three hours a week.

BIO 231. CELL BIOLOGY. (4) Prerequisite: two semesters of chemistry. Structural, functional and genetic aspects of cells; principles underlying living systems. Three lecture hours and one laboratory period of three hours a week.

BIO 301. NATURAL HISTORY. (4) Prerequisite: open to students in elementary education and to others with consent of department. No credit toward a biology major. Ecological aspects of plant and animal distribution, the importance of conservation of natural resources, and plant and animal identification. Three lecture hours and one laboratory period of three hours a week.

BIO 311. MICROBIOLOGY. (3) Prerequisite: BIO 231. Morphology, physiology and methods of culture and control of bacteria, viruses and related micro-organisms. Three lecture hours a week.

BIO 311L. MICROBIOLOGY LABORATORY. (1) Prerequisite or corequisite: BIO 311. One laboratory period of three hours a week.

BIO 313. EPIDEMIOLOGY. (3) Prerequisite: BIO 211 or 221 or 231 or consent of department. Concepts of epidemiology including disease agents and disease transmission; patterns of epidemic and endemic diseases. Three lecture hours a week.

BIO 319. PLANT SYSTEMATICS. (4) Prerequisite: BIO 211. Identification, classification and phylogenetic relationships of seed plants, including preparation and preservation of specimens. Two lecture hours and two laboratory periods of two hours each week.

BIO 321. VERTEBRATE ZOOLOGY. (4) Prerequisite: BIO 221 or consent of department. Taxonomy, anatomy, physiology and life histories of vertebrates, with emphasis on local forms. 321A—Ichthyology; 321B— Herpetology; 321C—Ornithology; 321D—Mammalogy. Three lecture hours and one laboratory period of three hours a week.

BIO 323. PARASITOLOGY. (4) Prerequisite: BIO 221 and 231. Morphology, life cycles, ecology, taxonomy and economic importance of parasites. Three lecture hours a week and one laboratory period of three hours a week.

BIO 325. INVERTEBRATE ZOOLOGY. (4) Prerequisite: BIO 221. Taxonomy, anatomy, physiology and life histories of invertebrates, with main emphasis on species important to man. Three lecture hours and one laboratory period of three hours a week.

BIO 331. GENETICS. (3) Prerequisite: BIO 231 or one course in biology and consent of department. Basic concepts of heredity; principles of classical and molecular genetics. Three lecture hours a week.

BIO 331L. GENETICS LABORATORY. (1) Prerequisite or corequisite: BIO 331. One laboratory period of three hours a week.

BIO 333. PLANT GROWTH AND DEVELOPMENT. (4) Prerequisite: BIO 211 and 231. Growth and development of plants with emphasis on physical and chemical differentiation. Three lecture hours and one laboratory period of three hours a week.

BIO 335. HUMAN GENETICS. (3) Prerequisite: one semester of biology. The inheritance of physical and mental characteristics in man. Effects on mutation, selection, migration and environment are considered. Three lecture hours a week.

BIO 338. EMBRYOLOGY. (3) Prerequisite: BIO 221 and 231 or 101 with consent of department. Developmental processes occurring chiefly during gametogenesis, fertilization, early embryogenesis and organogenesis. Three lecture hours a week.

BIO 338L. EMBRYOLOGY LABORATORY. (1) Prerequisite or corequisite: BIO 338. One laboratory period of three hours a week.

BIO 345. COMPARATIVE VERTEBRATE ZOOLOGY. (4) Prerequisite: BIO 221. Comparative studies of the anatomy, physiology and functional adaptations of selected vertebrates with emphasis on evolutionary developments, especially in mammals. Three lecture hours and one laboratory period of three hours a week.

BIO 347. HISTOLOGY. (4) Prerequisite: BIO 221 or 231 or 101 with consent of department. Animal tissues and organs; techniques of preparing tissues for analysis. Two lecture hours and two laboratory periods of two hours a week.

BIO 352. VERTEBRATE PALEONTOLOGY. (3) Prerequisite: BIO 221 or consent of department. Evolution of vertebrate animals from the first fishes to man. Three lecture hours a week.

BIO 355. ANIMAL BEHAVIOR. (3) Prerequisite: one course in biology or consent of department. Causation, development, function and evolution of behavior. Topics include communication systems, social systems and behavior of man. Three lecture hours a week.

BIO 355L. ANIMAL BEHAVIOR LABORATORY. (1) Prerequisite or corequisite: BIO 355. One laboratory period of three hours a week.

BIO 357. WILDLIFE BIOLOGY. (3) Prerequisite: BIO 101 or 221. Principles and techniques employed in the study and management of wildlife species. Three lecture hours a week.

BIO 357L. WILDLIFE BIOLOGY LABORATORY. (1) Prerequisite or corequisite: BIO 357. Three laboratory hours a week.

BIO 361. ECOLOGY. (3) Prerequisites: BIO 211, 221, and one course in chemistry. Interrelationships of organisms and their environment. Three lecture hours a week.

BIO 361L. ECOLOGY LABORATORY. (1) Prerequisite or corequisite: BIO 361. One laboratory period of three hours per week.

BIO 363. FIELD BIOLOGY. (4) Prerequisite: BIO 211 and 221. Roles of soils, water and climate on plant growth and distribution; plant succession and its effect on animal distribution; identification and life histories of selected plants and animals. Three lecture hours and one laboratory period of three hours a week.

BIO 369. ENVIRONMENTAL PROBLEMS. (3) Prerequisite: one course in biology and one course in chemistry. Biological aspects of air, water and land pollution; resource depletion; and overpopulation. Three lecture hours a week.

BIO 373. PLANT PHYSIOLOGY. (4) Prerequisites: BIO 211 and 231. Metabolic and physiological processes of plants and conditions which affect or regulate these processes. Three lecture hours and one laboratory period of three hours a week.

BIO 375. ANIMAL PHYSIOLOGY. (4) Prerequisite: BIO 221 and two courses in chemistry. Fundamental control mechanisms which operate to maintain the homeostatic state. Three lecture hours and one laboratory period of three hours a week.

BIO 391. RADIATION BIOLOGY. (3) Prerequisite: BIO 231 and one course in organic chemistry. Biological effects of ionizing radiation on living matter. Three lecture hours a week.

BIO 395. SPECIAL TOPICS IN BIOLOGY. (1-4) May be repeated for credit. Prerequisite: consent of department. Used to comply with requests for special topics and advanced studies in biology. Lecture hours and laboratory hours will vary with the courses taught.

BIO 397. INTERNSHIP IN COMMUNITY EDUCATION AND SERVICE. (3) Prerequisites: junior standing, acceptance into the program and approval of the department. Corequisite: SBS 398. A project oriented, service-learning internship with cooperating community organizations. The Department of Biology has the option of

recognizing this credit as fulfilling departmental requirements and granting permission to repeat for credit.

BIO 401. INTEGRATIVE STUDIES IN BIOLOGY. (3) No credit toward a biology major, except one hour which may be substituted for Biology 491. A course for, but not limited to, persons preparing to teach grades 7-12. An integration of the various disciplines of biology stressing the attitudes and techniques necessary to teach laboratory-oriented courses. Three lecture hours a week.

BIO 431. MOLECULAR BIOLOGY. (3) Prerequisites: BIO 331 and CHE 232. Structural and functional interaction of nucleic acids and proteins in the replication, transcription, and translation of genetic material. Three lecture hours a week.

BIO 437. CYTOGENETICS. (4) Prerequisite: BIO 331. Plant and animal cells, with emphasis on problems of chromosomal organization, function and behavior including the role of chromosome number and aberrations in speciation and evolution. Three lecture hours and one laboratory period of three hours a week.

BIO 451. EVOLUTION AND POPULATION GENETICS. (3) Prerequisite: BIO 331 or 335. Theories of evolution and forces which affect population genetics. Three lecture hours a week.

BIO 461. LIMNOLOGY AND OCEANOGRAPHY. (3) Prerequisite: two courses in chemistry. Geological, physical, chemical and biological aspects of lakes, streams, estuaries and oceans. Three lecture hours a week.

BIO 461L. LIMNOLOGY AND OCEANOGRAPHY LABORATORY. (1) Prerequisite or corequisite: BIO 461. One laboratory period of three hours a week.

BIO 462. COMMUNITY ECOLOGY. (3) Prerequisite: BIO 361. Community structure, species composition, energy flow, nutrient cycles, and succession; simple computer models of nutrient cycling. Three lecture hours a week.

BIO 462L. COMMUNITY ECOLOGY LABORATORY. (1) Corequisite: BIO 462. Quantitative study of a forest ecosystem on the UNCC Ecological Reserve. One laboratory period of three hours a week.

BIO 473. IMMUNOLOGY. (3) Prerequisites: BIO 311 and one semester of organic chemistry. Basic concepts of disease resistance in mammals; non-specific defense mechanisms, physiochemical properties and interactions of antigens and antibodies, and cell-associated defense phenomena. Three lecture hours a week.

BIO 473L. IMMUNOLOGY LABORATORY. (1) Prerequisite or corequisite: BIO 473. One laboratory period of three hours a week.

BIO 474. VIROLOGY. (4) Prerequisite: BIO 311, 311L and two courses in organic chemistry. Morphology, classification, genetics

and pathogenicity of bacterial, plant and animal viruses. Three lecture hours and one laboratory period of three hours a week.

BIO 475. ENDOCRINOLOGY. (3) Prerequisite: BIO 375 and one course in organic chemistry. Endocrine glands and their physiological roles in metabolism, growth and reproduction. Three lecture hours a week.

BIO 475L. ENDOCRINOLOGY LABORATORY. (1) Prerequisite or corequisite: BIO 475. One laboratory period of three hours a week.

BIO 476. COMPARATIVE INVERTEBRATE PHYSIOLOGY. (3) Prerequisite: BIO 221, 231 and one course in organic chemistry or consent of department. Maintenance of body fluids; acquisition, processing and distribution of nutrient materials; gas exchange; movement and coordination. Three hours a week.

BIO 476L. COMPARATIVE INVERTEBRATE PHYSIOLOGY LABORATORY. (1) Prerequisite or corequisite: BIO 476. One laboratory period of three hours a week.

BIO 477. CELL PHYSIOLOGY. Prerequisites: BIO 231 and CHE 231. The fundamental physiochemical properties of cells. Three lecture hours a week.

BIO 484. RADIOISOTOPE TECHNIQUES. (4) Prerequisite: two semesters of chemistry. Use of radioisotopes in science: properties of sub-atomic particles, instrumentation, safety procedures and radioisotope labeling. Three lecture hours and one laboratory period of three hours a week.

BIO 491. SEMINAR. (1) Required of all majors, to be taken during the senior year. Pertinent topics in the field of biology, and reports on original research are discussed. Students are required to act as the discussion leaders. One lecture hour a week.

BIO 497. INVESTIGATIONS IN BIOLOGY. (1-4) May be repeated for credit. Prerequisite: consent of the department. A course designed to allow junior and senior biology majors to initiate research projects in their respective fields of interest.

BIO 538. MECHANISMS IN DEVELOPMENT. (3) Prerequisites: BIO 231 and 338, or consent of department. Cellular and molecular bases of differentiation; an exploration of the experimental analysis of causal and controlling factors in development. Three lecture and discussion hours a week.

BIO 572. MARINE MICROBIOLOGY. (4) Prerequisite: BIO 311L. Bacteria, fungi, and viruses of marine origin, and their response to the salt, temperature, pressure and nutrient environment of the ocean. Roles of marine microorganisms in public health, pollution and fouling.

BIO 577. NEUROBIOLOGY. (3) Prerequisite: BIO 231 or consent of department. Physiology and anatomy of nervous systems. Three lecture hours a week.

BIO 577L. NEUROBIOLOGY LABORATORY. (1) Prerequisite or corequisite: BIO 577. One laboratory period of three hours a week.

DEPARTMENT OF CHEMISTRY

Chairman: Professor Gibson
Charles H. Stone Professor of Chemistry: Burson
Professors: Crosthwaite, DuBois, Kuppers
Associate Professors: Bush, Cooke, Walsh
Assistant Professors: Cassen, Howard, Jones, Mattingly, Rillema

Students planning to start careers as chemists with the baccalaureate degree and those who intend to prepare for graduate study in chemistry should pursue the B.S. degree.

A major in chemistry leading to the B.S.* degree consists of a minimum of 44 semester hours of chemistry among which must be included Chemistry 101, 102, 101L, 102L, 231, 232, 231L, 232L, 311, 341, 342, 411, 421, 431 and two semesters of Chemistry 495. Related work in mathematics and physics must include Mathematics 141, 142, and 241 or 271 and Physics 221, 231, 251 and 252. Two years of German or Russian are required for the B.S. degree.

The B.A. curriculum can be tailored to fit individual needs of those preparing for medical and dental schools, those considering graduate work in sciences closely related to chemistry and those desiring a liberal education with concentration in chemistry and related natural sciences.

A major in chemistry leading to the B.A. degree consists of a minimum of 28 semester hours of chemistry among which must be included Chemistry 101, 102, 101L, 102L, 231, 232, 231L, 232L and 311. Related work must include Mathematics 141, 142 and eight hours of physics selected from Physics 101, 102, 221, 231, 251, and 252.

Students who complete a major in chemistry automatically meet the chemistry subject matter requirements, on the secondary level, for teacher certification in North Carolina. Students seeking teacher certification should consult a coadviser in the College of Human Development and Learning for detailed planning of their professional education.

Chemical engineering, dentistry, medicine, or pharmacy students have the option of majoring in chemistry. Interested students should consult the catalog section on preparation for professional schools for the appropriate suggested curriculum.

B.A. IN CHEMISTRY WITH AN OPTION IN MEDICAL TECHNOLOGY

A student may complete the departmental requirements for the B.A. degree in Chemistry in three years. Upon satisfactory completion of training in medical technology at a school of medical tech-

*The B.S. degree program is approved by the Committee on Professional Training of the American Chemical Society.

nology, which has been approved by the National Registry of Clinical Pathologists and UNCC, the student may receive a B.A. degree in Chemistry from UNCC. Gaining admission to an approved school of medical technology is the responsibility of the student. A maximum of 30 hours will be accepted from the school of medical technology. Four of these hours will apply toward the requirements for the major in chemistry. The student must have at least a 2.0 average, overall and in the major, at the end of the junior year. The final 30 hours counted toward the degree and the last 12 hours counted toward the major prior to entering a school of medical technology must be taken at UNCC. The student may obtain information from his departmental adviser concerning those specific schools of medical technology cooperating with UNCC in this program. Individual applications for admission to a particular school of medical technology must be submitted.

Honors Program in Chemistry

The recommended curriculum for the B.S. degree in Chemistry includes independent study and seminar presentation during the final year of study. To obtain a degree with Honors in Chemistry, the student must complete two semesters of independent research with a grade of Pass Honors, two semesters of the senior seminar with a grade of Pass Honors and at least one junior level laboratory course with a grade of Pass Honors. The student will formally enter the honors program at the beginning of his junior year or halfway through his junior year. Consideration for admission to the program may be initiated by the student or by any faculty member. The Honors Committee of the Chemistry Department will formally approve admission.

The department, in addition to the foregoing undergraduate programs, offers the *Master of Science degree in Chemistry.* This is a research-based program in which major emphasis is placed upon the research project and required thesis. Further details may be found in the *Graduate Catalog.*

RECOMMENDED CURRICULUM FOR THE B.A. DEGREE IN CHEMISTRY

Freshman Year

Chemistry 101*	3	Chemistry 102*	3
Chemistry 101L*	1	Chemistry 102L*	1
English 101	3	English 102	3
Mathematics 103**	3	Mathematics 141**	4
Social Science	3	Social Science	3
Elective	3	Elective	3
	16		17

Sophomore Year

Chemistry 231	3	Chemistry 232	3
Chemistry 231L	1	Chemistry 232L	1
Mathematics 142	4	German 102	4
German 101	4	Humanities	3
Humanities	3	Electives	6
	15		17

Junior Year

Chemistry 311	4	Chemistry	3
Mathematics	3	Mathematics	3
Physics	4	Physics	4
German 201	4	German 202	4
		Elective	3
	15		17

Senior Year

Chemistry	4	Chemistry	4
Electives	12	Electives	12
	16		16

RECOMMENDED CURRICULUM FOR THE B.S. DEGREE IN CHEMISTRY

Freshman Year

Chemistry 101*	3	Chemistry 102*	3
Chemistry 101L*	1	Chemistry 102L*	1
English 101	3	English 102	3
Mathematics 141**	4	Mathematics 142**	4
German 101	4	German 102	4
	15		15

Sophomore Year

Chemistry 231	3	Chemistry 232	3
Chemistry 231L	1	Chemistry 232L	1
Mathematics 241 or 271	3	Physics 231	3
Physics 221	3	Physics 252	2
Physics 251	1	German 202	4
German 201	4	Elective	3
	15		16

*Students who can demonstrate to the Chemistry Department proficiency in Chemistry 101, 102, 101L, and 102L (Principles of Chemistry) may start with Chemistry 231 and 231L (see Credit by Examination, page 66).

**For proper placement in the mathematics sequence, the student must take placement examinations offered by the Mathematics Department.

Junior Year

Chemistry 341	4	Chemistry 342	4
Chemistry 311	4	Chemistry 411	4
Humanities	3	Humanities	3
Social Science	3	Social Science	3
	14		14

Senior Year

Chemistry 421	4	Chemistry 431	4
Chemistry 490	2	Chemistry 490	2
Chemistry 495	1	Chemistry 495	1
Electives	9	Electives	9
	16		16

RECOMMENDED CURRICULUM FOR THE B.A. IN CHEMISTRY WITH AN OPTION IN MEDICAL TECHNOLOGY

Freshman Year

Chemistry 101*	4	Chemistry 102*	3
Chemistry 101L*	1	Chemistry 102L*	1
Mathematics 103**	3	Mathematics 141**	4
English 101	3	English 102	3
Physics 101	4	Physics 102	4
	15		15

Sophomore Year

Chemistry 231	3	Chemistry 232	3
Chemistry 231L	1	Chemistry 232L	1
Mathematics 142	4	Biology 231	4
Biology 221	4	Social Science	3
Social Science	3	Humanities	6
	15		17

*Students who can demonstrate to the Chemistry Department proficiency in Chemistry 101, 102, 101L, and 102L (Principles of Chemistry) may start with Chemistry 231 and 231L (See Credit by Examination, page 66.)

**For proper placement in the mathematics sequence, the student must take placement examinations offered by the Mathematics Department.

Junior Year

Chemistry 311	4	Chemistry Elective	4
Biology 375	4	Electives	9-11
Biology 311	3		
Biology 311A	1		
Elective	3		
	15		13-15

TOTAL 90-92

Senior Year
At an approved school of medical technology.

COURSE DESCRIPTIONS

CHEMISTRY

Separate lecture and laboratory sections - Although the laboratory and lecture sections of CHE 101, 102, 103, 104, 231 and 232 are taught as separate courses, it is strongly recommended that students take the appropriate laboratory concurrently with the lecture. Students with severe scheduling problems or students with course programs which do not require the laboratory may take the lecture without the laboratory.

Prior to the last day to drop a course without grade evaluation, students withdrawing from lecture must also withdraw from any laboratory course for which the lecture is a corequisite. After the last day to drop a course without grade evaluation, the lecture may be dropped and the laboratory continued only with the consent of the student's laboratory instructor.

Students using CHE 101 and 102 or CHE 103 and 104 to satisfy the *University Requirements* for the B.A. and B.S. Degrees (pages 00-00) must also take CHE 101L and 102L, or CHE 103L and 104L, respectively.

CHE 101. PRINCIPLES OF CHEMISTRY. (3) Prerequisite or corequisite: MAT 101 or 103. A principles-oriented course for science majors. Fundamental postulates and laws of chemistry; the relationship of atomic structure to physical and chemical properties of the elements. Two lecture hours and one recitation hour per week.

CHE 101L. PRINCIPLES OF CHEMISTRY LABORATORY. (1) Prerequisite or corequisite: CHE 101. Experimental investigations involving the fundamental postulates and laws of chemistry. One laboratory period of three hours per week.

*Students who can demonstrate to the Chemistry Department proficiency in Chemistry 101, 102, 101L, and 102L (Principles of Chemistry) may start with Chemistry 231 and 231L (see Credit by Examination, page 66.)

**For proper placement in the mathematics sequence, the student must take placement examinations offered by the Mathematics Department.

CHE 102. PRINCIPLES OF CHEMISTRY. (3) Prerequisite: CHE 101. Continuation of CHE 101. Two lecture hours and one recitation hour per week.

CHE 102L. PRINCIPLES OF CHEMISTRY LABORATORY. (1) Prerequisites: CHE 101 and 101L. Prerequisite or corequisite: CHE 102. Continuation of CHE 101L. One laboratory period of three hours per week.

CHE 106L. INTRODUCTION TO MODERN LABORATORY METHODS. (1) Prerequisite or corequisite: CHE 102. One laboratory period of three hours per week. The laboratory will consist of open-ended studies on topics compatible with the CHE 102 lecture material. Students use techniques common to those used in current chemical research; modern instrumentation is used extensively. The background needed to utilize minicomputers in data acquisition and data reduction is presented. The course is intended for students planning to take additional chemistry courses and can be substituted for the CHE 102L requirement for all degrees in chemistry.

CHE 103. GENERAL CHEMISTRY. (3) Designed primarily for non-science majors. Fundamentals of chemistry and selected topics from inorganic, organic, colloid, nuclear and biochemistry. Three lecture hours per week (Credit for both 101 and 103 will not be given.)

CHE 103L. GENERAL CHEMISTRY LABORATORY. (1) Prerequisite or corequisite: CHE 103. Laboratory investigations into the nature of inorganic and organic compounds. One laboratory period of three hours per week. (Credit for both 101L and 103L will not be given.)

CHE 104. GENERAL CHEMISTRY. (3) Designed primarily for non-science majors. Prerequisite: CHE 103. Continuation of CHE 103 including qualitative analysis. Three lecture hours per week. (Credit for both 102 and 104 will not be given.)

CHE 104L. GENERAL CHEMISTRY LABORATORY. (1) Prerequisites: CHE 103 and 103L. Prerequisite or corequisite: CHE 104. Continuation of CHE 103L including qualitative analysis. One laboratory period of three hours per week. (Credit for both 102L and 104L will not be given.)

CHE 225. INORGANIC CHEMISTRY. (3) Prerequisite: CHE 102. Descriptive inorganic chemistry including acid-base and non-aqueous solvent concepts. Three lecture hours a week.

CHE 231. ORGANIC CHEMISTRY. (3) Prerequisite: CHE 102. Descriptive principles and techniques of organic chemistry and their applications to reactions of aliphatic and aromatic compounds and natural products. Three lecture hours per week.

CHE 231L. ORGANIC CHEMISTRY LABORATORY. (1) Prerequisites: CHE 102 and CHE 102L. Prerequisite or corequisite: CHE 231. Laboratory investigations into the physical and chemical

properties of organic compounds. One laboratory period of three hours per week.

CHE 232. ORGANIC CHEMISTRY. (3) Prerequisite: CHE 231. Continuation of CHE 231. Three lecture hours per week.

CHE 232L. ORGANIC CHEMISTRY LABORATORY. (1) Prerequisites: CHE 231 and 231L. Prerequisite or corequisite: CHE 232. Continuation of CHE 231L. One laboratory period of three hours per week.

CHE 241. SURVEY OF PHYSICAL CHEMISTRY. (3) Prerequisites: CHE 102, 102L, MAT 120 or one semester of calculus (high school or higher), PHY 101 or one semester of physics (high school or higher). A course designed for students in the life sciences or others desiring a one-semester survey of the physical aspects of chemistry. Application of thermodynamics to chemical reactions, energy transfer processes, and chemical and physical equilibria; the study of reaction rates and mechanisms; structure of gases, liquids and solids; molecular structure and spectroscopy. Three lecture hours per week.

CHE 311. QUANTITATIVE ANALYSIS. (4) Prerequisite: CHE 102, 102L. Introductory course in quantitative and analytical chemistry. Principles of equilibrium, classical and simple instrumental approaches are considered. Two lecture hours and two laboratory periods of three hours each week.

CHE 312. BIOANALYTICAL CHEMISTRY. (4) Prerequisites: Chemistry 231, 231L and 311. Introductory course in modern analytical methods, with laboratory applications emphasizing experiments in organic chemistry, biochemistry and chemical aspects of the life sciences. Two lecture hours and two laboratory periods of three hours each week.

CHE 341. PHYSICAL CHEMISTRY. (4) Prerequisites: CHE 102, 102L, PHY 231 and 252. Prerequisite or corequisite: MAT 241 or 271. The application of classical thermodynamics and the phase rule to chemical equilibrium; electrochemistry; the kinetic theory of gases and elements of statistical mechanics applied to chemical processes; atomic and molecular structure interpreted in quantum mechanical terms. Three lecture hours and one laboratory period of three hours per week. (Credit for both 341 and 345 will not be given.)

CHE 342. PHYSICAL CHEMISTRY. (4) Prerequisite: CHE 341. Continuation of CHE 341. Three lecture hours and one laboratory period of three hours a week. (Credit for both 342 and 346 will not be given.)

CHE 345. PHYSICAL CHEMISTRY. (3) Prerequisite: consent of the instructor. Same course as CHE 341 but taught without the laboratory. Three lecture hours a week. (Credit for both 341 and 345 will not be given.)

CHE 346. PHYSICAL CHEMISTRY. (3) Prerequisite: CHE 341 or 345. Same course as CHE 342 but taught without the laboratory. Three lecture hours a week. (Credit for both 342 and 346 will not be given.)

CHE 375. INTRODUCTORY BIOCHEMISTRY. (3) Prerequisite: CHE 232. The chemical constitution of living matter, biochemical processes. Three lecture hours per week.

CHE 390. SPECIAL TOPICS IN CHEMISTRY. (1-4) Prerequisite: consent of department. May be repeated for credit. Lecture and/or laboratory hours will vary with the nature of the course taught. Topics chosen from analytical, biochemistry, inorganic, organic and physical chemistry.

CHE 397. INTERNSHIP IN COMMUNITY EDUCATION AND SERVICE. (3) Prerequisites: junior standing, acceptance into the program and approval of the department. A project oriented, service learning internship with cooperating community organizations. Credit toward the B.A. and B.S. degrees in chemistry will not be given for this course. May be repeated for credit with permission of the Chemistry Department. This course is offered on a pass/no-credit basis only.

CHE 411. INSTRUMENTAL ANALYSIS. (4) Prerequisites: CHE 311 and 341. A discussion of modern electrochemical and chromatographic techniques and of ultraviolet, infrared, NMR, ESR, Raman and mass spectroscopy. The discussion includes theory and practice, with considerable attention given to the instrument and elementary electronics involved in the techniques. Two lecture hours and two three-hour laboratory periods a week.

CHE 412. APPLIED MINICOMPUTER INTERFACING IN CHEMISTRY. (4) Prerequisite: Departmental approval. Three lecture hours and one laboratory period of three hours each week. The background needed to apply minicomputer interfacing in chemical research, including machine language programming unique to DEC PDP-8 family minicomputers and elementary digital electronics will be presented, and application of computer automation in chemical research will be discussed. The laboratory will involve individual projects; the design, development and implementation of the software and hardware needed to solve an interfacing project selected by the student. The course is designed to provide a foundation for the use of computer automation in research. No background in programming or electronics is required.

CHE 421. ADVANCED INORGANIC CHEMISTRY. (4) Prerequisite: CHE 342. Theoretical inorganic chemistry including the application of physico-chemical principles to the study of inorganic systems. Laboratory work involves inorganic preparations and characterization techniques. Three lecture hours and one laboratory period of three hours a week.

CHE 431. ADVANCED ORGANIC CHEMISTRY. (4) Prerequisites: CHE 232, 232L and 311. Recent developments in organic chemistry. Laboratory techniques of organic chemistry with emphasis on qualitative organic analysis including instrumental methods. Two lecture hours and two laboratory periods of three hours each week.

CHE 445. ADVANCED PHYSICAL CHEMISTRY. (3) Prerequisite: CHE 342. Topics selected from quantum chemistry and/or statistical thermodynamics. Three lecture hours per week.

CHE 475. PHYSICAL BIOCHEMISTRY. (3) Prerequisites: CHE 232, 232L and 341 or 345. Colloid systems, equilibria in biological fluids, mass and energy transport in fluids and in association with membranes, energy storage and dissipation with relation to specific chemical bonding, enzyme kinetics. Three lecture hours per week.

CHE 490. INDEPENDENT STUDY AND RESEARCH. (1 to 4) Prerequisite: consent of the instructor overseeing the research. Independent study and research. A senior project in any of these fields of chemistry: organic, physical, analytical, inorganic chemistry or biochemistry; introduction to research. Hours in consultation, library and laboratory to be determined. May be repeated for credit.

CHE 495. CHEMISTRY SEMINAR. (1) Prerequisite: senior standing. Discussion of recent developments and special topics in chemistry. Written and oral reports are required.

CHE 590. SPECIAL TOPICS IN CHEMISTRY. (1-4) Prerequisite: consent of department. May be repeated for credit. Lecture and/or laboratory hours will vary with the nature of the course taught. Selected topics in chemistry.

DEPARTMENT OF MATHEMATICS

Chairman: Professor Schell
Professors: Goodrum, Nixon
Associate Professors: Hedstrom, Johnson, Lambert, Lucas, Niccolai, Quinn, Reiter, Schurle, Weinstock
Assistant Professors: Archer*, Hameed, Houston, Leiva, Pearce, Pellerin, Roth, Stavrakas, Stewart, Wichnoski, Wright
Leeturers: Dremann, Han, McMillan
Part-time Instructors: Chilton, Ferrier, Fields, Halstead, Helmintoller, Jones, Kirby, Logan, Lover, Maier, Messa, Price, Priebe, Quinn, Rehn, Reiter, Richey, Shoemake, Smith, Taylor, Thomas, Turbeville, Whitton

Two baccalaureate degrees are offered by the Department of Mathematics, a Bachelor of Arts degree and a Bachelor of Science degree. Within each degree one may select one of two options, either the option in Mathematics or the new option in Computer Science. The description of the Mathematics option follows immediately. The description of the Computer Science option begins on page 283.

OPTION IN MATHEMATICS

A major in mathematics for the B.A. degree consists of a minimum of 27 semester hours of mathematics courses numbered 140 and above and approved by the department. Related work must be approved by the department.

A major in mathematics for the B.S. degree consists of a minimum of 39 semester hours of mathematics courses numbered 140 and above and approved by the department. Related work must be approved by the department. A student planning to study mathematics in graduate school should take French, German or Russian.

An entering freshman who plans to take Mathematics 141, in particular a mathematics major, will first enroll in Mathematics 103, unless exempted by the department. It is recommended that a prospective freshman major enroll in this course during the summer session immediately preceding his freshman year.

Specific requirements for the B.A. and B.S. degree will vary with the specific objectives of the student. Some objectives which are possible are: graduate work, applied mathematics, statistics, computer science, certification for elementary or secondary teaching.

**On leave of absence*

CURRICULUM OUTLINE FOR THE B.A. OPTION IN MATHEMATICS

Freshman Year

Mathematics 141	4	Mathematics 142	4
English 101	3	English 102	3
Social Science	3	Social Science	3
Language (Or Elective)	4(3)	Language (Or Elective)	4(3)
	14(13)		14(13)

Sophomore Year

Mathematics 241	3	Mathematics 271	3
Mathematics 263 (or 264)	3	Mathematics 264 (or 263)	3
Humanities	3	Humanities	3
Science	4	Science	4
Related Work	3	Related Work	3
	16		16

Junior Year

Mathematics 3xx or 4xx	3	Mathematics 3xx or 4xx	3
Related Work	3	Related Work	3
Electives	9	Electives	9
	15		15

Senior Year

Mathematics 3xx or 4xx	3	Mathematics 3xx or 4xx	3
Related Work	3	Related Work	3
Electives	10	Electives	8-10
	16		14-16

CURRICULUM OUTLINE FOR THE B.S. OPTION IN MATHEMATICS

Freshman Year

Mathematics 141	4	Mathematics 142	4
English 101	3	English 102	3
Social Science	3	Social Science	3
Language (Or Elective)	4(3)	Language (Or Elective)	4(3)
	14(13)		14(13)

Sophomore Year

Mathematics 241	3	Mathematics 271	3
Mathematics 263 (or 264)	3	Mathematics 264 (or 263)	3
Humanities	3	Humanities	3
Science	4	Science	4
Related Work	3	Related Work	3
	16		16

Junior Year

Mathematics 341	3	Mathematics 3xx or 4xx	3
Science	3-4	Related Work	3
Related Work	3	Electives	9
Electives	3		
	15-16		15

Senior Year

Mathematics 3xx or 4xx	6	Mathematics 3xx or 4xx	6
Related Work	3	Related Work	3
Electives	6	Electives	6-8
	15		15-17

COURSE DESCRIPTIONS

The first digit of each course number indicates the year in which the course is normally taken: 1 denoting the freshman year and 2, 3, 4 denoting the sophomore, junior and senior years respectively; a first digit of 5 denotes graduate courses which are also open for undergraduate credit; first digits of 6 and 7 denote courses open only for graduate credit.

The middle digit of each course number generally indicates the subarea of mathematics to which the course belongs according to the following scheme—

0: General concepts; foundations and history of mathematics

1: Decision mathematics

2: Probability of statistics

3: Mathematics Education

4: Analysis

5: General topics

6: Algebra

7: Applied mathematics

8: Geometry-topology

9: Seminars and independent study

(MAT 120 is the only exception to this scheme.)

MAT 101. BASIC CONCEPTS OF MATHEMATICS. (3) Algebraic properties of the real number system; sets, relations, functions; graphing and solution of equations and inequalities; vectors and matrices; introduction to linear programming. (Credit not given to students having credit for MAT 103.)

MAT 103. CONCEPTS OF MATHEMATICS. (3) A study of the real number system including the basic field operations, the order relation and absolute value; solutions of equations and inequalities; sets, functions and relations; graphing; brief treatment of trigonometry. (Credit not given for Mathematics 101, 103A where credit is awarded for Mathematics 103.)

MAT 103A. CONCEPTS OF TRIGONOMETRY. (1) Prerequisite: placement by the Department of Mathematics. A brief study of the trigonometric functions; trigonometric identities; solution of equations and triangles; graphs of trigonometric functions. (Credit not given for both Mathematics 103 and 103A).

MAT 105. COMPUTATIONAL MATRIX ALGEBRA. (1) Prerequisite: none. An introduction to the solution of systems of linear algebraic equations. Basic properties of matrices and determinants will be introduced and several methods of solution for linear algebraic systems will be developed. The computational efficiency of the solution techniques will be compared. Further topics to include the algebra of complex numbers; two and three dimensional vector algebra, inner product and vector cross product. One lecture and one laboratory meeting per week.

MAT 120. CALCULUS. (3) Prerequisite: MAT 101 or 103. A brief treatment of basic concepts of differential and integral calculus with applications to business and to the social and life sciences; polynomial, exponential and logarithmic functions.

MAT 122. ELEMENTS OF STATISTICS. (3) Prerequisite: MAT 101 or 103. An introduction to the principles of statistical measures and hypothesis testing. Mean, variance, standard deviation; confidence intervals; binomial and normal distributions; contingency tables, chisquare test; nonparametric tests including the sign test and rank sum test, the t-test; linear regression correlation and an introduction to analysis of variance and multiple regression.

MAT 141. DIFFERENTIAL AND INTEGRAL CALCULUS I. (4) Prerequisite: MAT 103. Limits, continuity of $R \rightarrow R$ functions; differentiation and integration of rational functions; extreme values; concavity; curve sketching; velocity and acceleration; area; volumes of rotation; work; arc length.

MAT 142. DIFFERENTIAL AND INTEGRAL CALCULUS II. (4) Prerequisite: MAT 141 with a grade of C or better. Differential and integral calculus of transcendental functions (trigonometric, inverse trigonometric, exponential and logarithmic functions); methods of integration and further applications; indeterminate forms, improper integrals, series.

MAT 211. INTRODUCTION TO OPERATIONS RESEARCH. (3) Prerequisites: Mathematics 120 and Computer Science 100. Modeling and Graph Theory with applications to linear programming, critical path analysis, transportation and allocation problems, and queueing theory.

MAT 221. INTRODUCTION TO PROBABILITY. (3) Prerequisite: MAT 101 or 103. A study of the elements of probability theory. Sample spaces, events, probability of an event, conditional probability, independent events. Random variables, mean, variance and standard deviation, joint probability functions, independent random variables, sampling covariance and correlation, Binomial distribution and hypothesis testing.

MAT 241. DIFFERENTIAL AND INTEGRAL CALCULUS III. (3) Prerequisite: MAT 142 with a grade of *C* or better. Introduction to vector geometry; differential calculus of several variables, multiple integration; line integrals.

MAT 263. INTRODUCTORY MODERN ALGEBRA. (3) Prerequisite: MAT 103. The content is chosen to emphasize the axiomatic approach to algebraic structures through many concrete examples taken from rings, finite fields, polynomials and groups. The course is intended to familiarize the student with algebraic structures by emphasizing that abstract concepts arise from the analysis of concrete situations. It also facilitates the transition to more advanced algebra courses.

MAT 264. MATRICES AND LINEAR ALGEBRA. (3) Prerequisites: MAT 103. This course will emphasize the following topics: Algebra of matrices, solutions of linear equations, abstract vector spaces, determinants, similarity of matrices, inner products and unitary similarity, quadratic forms. This course provides a firm foundation and working knowledge of these areas and is of particular value to engineering, science and mathematics majors.

MAT 271. DIFFERENTIAL EQUATIONS. (3) Prerequisite: MAT 142 with a grade of *C* or better. An introduction to the study of differential equations; first order equations; general theory of ordinary linear differential equations; Laplace transform.

MAT 300. TOPICS IN FOUNDATIONS OR HISTORY OF MATHEMATICS. (2-3) Prerequisite: consent of the department. Topics in the foundations or the history of mathematics selected so as to supplement regular course offerings in this area of mathematics. Topics may be proposed by students and/or faculty and must be approved by the department. (May be repeated for additional credit with the approval of the department.)

MAT 310. TOPICS IN DECISION MATHEMATICS. (2-3) Prerequisite: consent of the department. Topics in decision mathematics selected so as to supplement regular course offerings in this area of mathematics. Topics may be proposed by students and/or faculty and must be approved by the department. (May be repeated for additional credit with the approval of the department.)

MAT 311. OPERATIONS RESEARCH I. (3) Prerequisites: MAT 120 and 122 with a grade of *C* or better. The first course of a two semester sequence, including matrix algebra, convex sets, linear programming, queuing and the theory of games.

MAT 312. OPERATIONS RESEARCH II. (3) Prerequisite: MAT 311. A continuation of MAT 311.

MAT 316. GRAPH THEORY. (3) Prerequisite: junior standing or consent of the department. A study of paths, trees, connectivity, planarity, duality, colorability, enumerability and vector spaces or graphs. Applications will be made to computer algorithms, switching and coding theory, transportation networks and Markov processes.

MAT 320. TOPICS IN PROBABILITY AND STATISTICS. (2-3) Prerequisite: consent of the department. Topics in probability and statistics selected so as to supplement regular course offerings in this area of mathematics. Topics may be proposed by students and/or faculty and must be approved by the department. (May be repeated for additional credit with the approval of the department.)

MAT 322. PROBABILITY AND STATISTICS I. (3) Prerequisite: MAT 241 with a grade of *C* or better. Continuous and discrete sample spaces, continuous and discrete random variables, moments and moment generating function, functions of random variables, some standard distributions, multivariate variables, laws of large numbers, limit theorems, stochastic processes.

MAT 323. PROBABILITY AND STATISTICS II. (3) Prerequisite: MAT 322. Estimation, bias, consistency, efficiency, method of moments, maximum likelihood estimates, sufficient statistics, testing hypothesis, simple hypothesis, most powerful test, composite hypothesis, the power function, uniformly most powerful test, sequential tests, the sequential likelihood ratio test, some one sample problem, the classical chi-square test, the Kolmogorov-Smirnov test.

MAT 340. TOPICS IN ANALYSIS. (2-3) Prerequisite: consent of the department. Topics in analysis selected so as to supplement regular course offerings in this area of mathematics. Topics may be proposed by students and/or faculty and must be approved by the department. (May be repeated for additional credit with the approval of the department.)

MAT 341. ADVANCED CALCULUS OF ONE VARIABLE. (3) Prerequisites: MAT 241 and junior standing. Least upper bound principle; sequences, sequences of functions; topology of the real line; continuity and uniform continuity of functions; differential calculus; Riemann integration.

MAT 342. ADVANCED CALCULUS OF SEVERAL VARIABLES. (3) Prerequisites: MAT 241 and MAT 264. Elementary calculus is extended to several variables and the classical theorems are treated in a modern setting. Topics include functions on

Euclidean space differentiation, inverse and implicit function theorems, integration, Fubini's theorem, change of variables, integration on chains, the fundamental theorem of calculus, integration on manifolds, Stokes' theorem, the classical integral theorem.

MAT 346. INTRODUCTION TO COMPLEX ANALYSIS. (3) Prerequisite: MAT 241 with a grade of *C* or better. Analytic function theory; complex integration; sequences; series; residue calculus and conformal mapping.

MAT 360. TOPICS IN ALGEBRA. (2-3) Prerequisite: consent of the department. Topics in algebra selected so as to supplement regular course offerings in this area of mathematics. Topics may be proposed by students and/or faculty and must be approved by the department. (May be repeated for additional credit with the approval of the department.)

MAT 366. COMBINATORIAL MATHEMATICS. (3) Prerequisite: MAT 241. The theory and application of the following enumerative techniques will be emphasized: permutations of distinct and nondistinct objects, generating functions for combinations, enumerators for permutations, recurrence relations, inclusion-exclusion principle, derangements, permutation groups, equivalence classes of functions and Polya's theory of counting.

MAT 370. TOPICS IN APPLIED MATHEMATICS. (2-3) Prerequisite: consent of the department. Topics in applied mathematics selected so as to supplement regular course offerings in this area of mathematics. Topics may be proposed by students and/or faculty and must be approved by the department. (May be repeated for additional credit with the approval of the department.)

MAT 371. APPLIED MATHEMATICS I. (3) Prerequisite: MAT 271 and 241 with grades of *C* or better. Boundary value problems, separation of variables, Fourier series and Fourier transforms, orthogonal functions.

MAT 372. APPLIED MATHEMATICS II. (3) Prerequisites: MAT 371 with a grade of *C* or better. A continuation of MAT 371.

MAT 376. NUMERICAL ANALYSIS. (3) Prerequisites: CSC 100, MAT 241 and 271. A treatment of the numerical solution of initial value and boundary value problems in ordinary differential equations. An introduction to the numerical solution of partial differential equations. Direct and iterative methods of solving systems of equations will be developed. Selected problems will be programmed for computer solution.

MAT 380. TOPICS IN GEOMETRY-TOPOLOGY. (2-3) Prerequisite: consent of the department. Topics in geometry and/or topology selected so as to supplement regular course offerings in this area of mathematics. Topics may be proposed by students and/or faculty and must be approved by the department. (May be repeated for additional credit with the approval of the department.)

MAT 381. FUNDAMENTAL CONCEPTS OF GEOMETRY. (3) Prerequisites: MAT 264 and consent of the department. Foundations of geometry, affine geometry, comparison of Euclidean and non-Euclidean geometries.

MAT 383. INTUITIVE TOPOLOGY. (3) Prerequisite: MAT 241. Introduction to combinatorial topology; topology of E^n; winding number and applications; homotopies and the fundamental group.

MAT 391. SEMINAR. (1-6) Prerequisite: consent of the department. Readings, study and discussion designed to develop the student's ability to study independently and to present his results properly.

MAT 392. SEMINAR. (1-6) Prerequisite: consent of the department. A continuation of MAT 391.

MAT 409. HISTORY OF MATHEMATICAL THOUGHT. (3) Prerequisite: consent of the department. A study of the development of mathematics in its historical setting from the earliest beginnings to modern times.

MAT 443. ANALYSIS I. (3) Prerequisite: MAT 341 with a grade of C or better or consent of the department. An introduction to metric spaces, including properties of subsets, continuity of functions, pointwise and uniform convergence of functions.

MAT 444. ANALYSIS II. (3) Prerequisite: MAT 443. An introduction to Lebesgue integration and measure theory, starting with a construction of measure for closed and bounded intervals of R and extending to an axiomatic treatment of a general measure on abstract spaces.

MAT 450. SELECTED TOPICS IN MATHEMATICS. (2-3) Prerequisite: consent of the department. Topics chosen from such fields as topology, differential geometry, complex analysis, applied mathematics or modern algebra. May be repeated for credit with the approval of the department.

MAT 463. MODERN ALGEBRA I. (3) Prerequisite: MAT 263 or consent of the department. The first course of a two semester sequence covering groups, rings, fields extensions, roots of polynomials and the rudiments of Galois Theory.

MAT 464. MODERN ALGEBRA II. (3) Prerequisite: MAT 463. A continuation of MAT 463. Fields, vector spaces, linear transformations and canonical forms.

MAT 465. NUMERICAL LINEAR ALGEBRA. (3) Prerequisite: CSC 100, MAT 264, 271. Direct methods of solving linear systems by Gaussian elimination and triangular decomposition. Matrix and vector norms, condition numbers and accuracy of solutions. Methods for solving the algebraic eigenvalue problem; the power and inverse power methods, reduction to upper Hessenberg

form and the QR algorithm. Iterative methods for solving large sparse matrix systems; Jacobi, Gauss-Seidel and successive over-relaxation (SOR) methods. Selected problems will be programmed for computer solution.

MAT 481. INTRODUCTION TO TOPOLOGY. (3) Prerequisite: MAT 383 or 341. Topics from set theory and point set topology such as cardinality, order, topological spaces, metric spaces, separation axiom, compactness and connectedness.

MAT 491. SEMINAR. (1-6) Prerequisite: consent of the department. Individual investigation and appropriate exposition of the results.

MAT 492. SEMINAR. (1-6) Prerequisite: consent of the department. A continuation of MAT 491.

MAT 522. STATISTICAL TECHNIQUES. (3) Prerequisite: consent of the department. (Credit toward mathematics major given only to teacher education students.) Probability models, random variables, large sample statistics, inferential statistics. (Credit toward mathematics major not given for both MAT 522 and MAT 322.)

MATHEMATICS EDUCATION

MAE 201. MATHEMATICS FOR THE ELEMENTARY SCHOOL TEACHER I. (4) An intuitive development of the real number system with emphasis on the principles of teaching and learning elementary mathematics; sets and set operations; systems of numeration; arithmetic operations. Laboratory activities and practical teaching experience in an elementary classroom.

MAE 202. MATHEMATICS FOR THE ELEMENTARY SCHOOL TEACHER II. (4) Prerequisite: MAE 201. Mathematical systems; the study of metric and nonmetric geometry; probability and statistics; relations, functions and their graphs. Activities and applications related to elementary and intermediate grades. Practical teaching experience in an intermediate classroom.

Advanced Undergraduate Courses Available for Graduate Credit in the M.Ed. Program

MAE 500. TOPICS IN MATHEMATICS EDUCATION, EARLY CHILDHOOD. (1-6) Consent of the department.

MAE 501. ARITHMETIC IN THE SCHOOL. (3) Prerequisite: MAT 101 or equivalent. A study of the number systems with emphasis placed upon the basic concepts and meanings, properties of addition, multiplication, inverses, systems of numeration and number line appropriate for each grade. (Does not count toward a major in mathematics. Open only to transfer students who have completed six semester hours of mathematics at another university.)

MAE 540. TOPICS IN MATHEMATICS EDUCATION, INTERMEDIATE. (1-6) Consent of the department.

MAE 541. MATHEMATICS FOR THE INTERMEDIATE SCHOOL TEACHER. (3) Prerequisites: MAE 202 or consent of the department. A study of the Algebraic properties of the real numbers; functions, equations, inequalities and their graphs; activities and applications related to upper elementary and intermediate grades.

MAE 570. TOPICS IN MATHEMATICS EDUCATION, SECONDARY. (1-6) Consent of the department.

MAE 571. MATHEMATICS FOR THE SECONDARY SCHOOL TEACHER. (3) Prerequisites: MAE 202 or mathematics major with declared option for Secondary School Teacher Certification or consent of the department. A study of secondary school mathematics and its relation to the curriculum K-12. Strategies, techniques and activities in teaching mathematics.

The Honors Program in Mathematics

The overall purpose of this program is to stimulate the imagination of the student by encouraging independent study and by freeing him to a certain extent from the more structured program which leads to a B.A. or B.S. in Mathematics. The program in honors will be kept as flexible as possible to allow students with different interests and abilities to benefit from it.

Any student may request entrance into the honors program at any time. A student in any one of the honors courses shall receive a grade of *Pass Honors, Pass, or No Credit.* The minimum required to obtain Honors in Mathematics is participation in two semesters of the Senior Honors Tutorial with a grade of *Pass Honors*, completion of a thesis and examination of the candidate by the Honors Committee of the Department of Mathematics upon his honors work.

MAT 190 H. FRESHMAN HONORS SEMINAR. (2) Prerequisite: consent of the department. An introduction to independent study.

MAT 290 H. SOPHOMORE HONORS SEMINAR. (2) Prerequisite: consent of the department. Further independent study.

MAT 390 H. JUNIOR HONORS SEMINAR. (2) Prerequisite: consent of the department. (May be repeated once for additional credit with approval of the department.)

MAT 490 H. SENIOR HONORS TUTORIAL. (3) Prerequisite: consent of the department. Individual tutorials in which the student will pursue independent study and research in any area of mathematics under the direction of one or more faculty members. The project of the student will be planned to culminate in a research paper of original or expository nature.

OPTION IN COMPUTER SCIENCE

The major for the B.A. degree with an option in Computer Science consists of a minimum of 17 hours of mathematics and a minimum of 27 additional hours in computer science or related mathematics courses. Of the latter, at least 12 hours must be in courses numbered 300 or above and must include a 3 hour Senior Project (CSC 450). A quality point average of 2.0 or better is also required. The program of courses presented for the major must be approved by the department.

The major for the B.S. degree with an option in Computer Science consists of a minimum of 20 hours of mathematics and a minimum of 36 additional hours in computer science or related mathematics courses. Of the latter, at least 18 hours must be in courses numbered 300 or above and must include a 6 hour Senior Project (CSC 450 and 451). A quality point average of 2.0 or better is also required. The program of courses presented for the major must be approved by the department.

An elective minor is required for both the B.A. and the B.S. and consists of at least 15 hours of courses other than computer science courses or 9 hours of MAT 3xx or higher; the minor must be approved by the mathematics department.

CURRICULUM OUTLINE FOR THE B.S. OPTION IN COMPUTER SCIENCE

Freshman Year

Mathematics 141	4	Mathematics 142	4
CSC 100	3	CSC 211*	3
English 101	3	English 102	3
Science	4	CSC 11x	1
	14	Science	4
			15

Sophomore Year

Mathematics 264	3	Mathematics Core	3
CSC 240	3	CSC 2xx	3
CSC 2xx	3	CSC 2xx	3
Humanities	3	Humanities	3
Minor	3	Minor	3
	15		15

Junior Year

Mathematics Core	3	Mathematics Core	3
Elective	3	CSC 3xx/4xx	3
CSC 341	3	Social Science	3
Social Science	3	Minor	3
Minor	3	Electives	4
	15		16

Senior Year

CSC 3xx/4xx	3	CSC 3xx/4xx	3
CSC 450	3	CSC 451	3
Minor	3	Minor	3
Electives	6	Electives	6
	15		15

CURRICULUM OUTLINE FOR THE B.A. OPTION IN COMPUTER SCIENCE

Freshman Year

Mathematics 141	4	Mathematics 142	4
CSC 100	3	CSC 211*	3
English 101	3	English 102	3
Science	4	Science	4
	14		14

Sophomore Year

Mathematics 264	3	Mathematics Core	3
CSC 240	3	CSC 2xx	3
Social Science	3	Social Science	3
Humanities	3	Humanities	3
Minor	3	Minor	3
	15		15

Junior Year

Mathematics Core	3	CSC 2xx	3
CSC 341	3	Minor	3
Minor	3	Electives	10
Electives	7		
	16		16

*May select any 2xx course, if proficient in two higher level languages.

Senior Year

CSC 3xx	3	CSC 3xx	3
CSC 450	3	Elective	3
Minor	3	Minor	3
Electives	6	Electives	6
	15		15

COURSE DESCRIPTIONS

COMPUTER SCIENCE

CSC 100. ALGORITHMIC LANGUAGES I. (3) Prerequisite or corequisite: MAT 101 or 103. An introduction to digital computing techniques through the study of FORTRAN IV. Various numerical and non-numerical algorithms will be studied, flowcharted, programmed and documented. Concepts such as computer hardware, computer application areas, etc. will be introduced when appropriate. Four classroom hours per week. Cannot be taken for credit if CSC 101 is taken for credit.

CSC 101. INTRODUCTION TO COMPUTER CONCEPTS. (3) Prerequisite or corequisite: MAT 101 or 103. Covers the development of the digital computer and its applications. Specific topics include: flow-charting, data representation, card readers, printers, disks, tapes, central processing units, batch processing, time-sharing, recent hardware and software developments and an introduction to programming languages. Cannot be taken for credit if CSC 100 is taken for credit.

CSC 110. FORTRAN PROGRAMMING. (1) Prerequisite: CSC 101 or consent of department. Various numerical and non-numerical algorithms studied, flowcharted, programmed in FORTRAN IV and computer tested. One lecture and one lab hour per week. Cannot be taken for credit if CSC 100 is taken for credit.

CSC 111. COBOL PROGRAMMING. (1) Prerequisite: CSC 100 or CSC 101 or consent of the department. Various numerical and non-numerical algorithms studied, flowcharted, programmed in COBOL and computer tested. One lecture and one lab hour per week.

CSC 112. ALGOL PROGRAMMING. (1) Prerequisite: CSC 100 or CSC 101 or consent of the department. Various numerical and non-numerical algorithms studied, flowcharted, programmed in ALGOL and computer tested. One lecture and one lab hour per week.

CSC 113. PL/I PROGRAMMING. (1) Prerequisite: CSC 100 or CSC 101 or consent of the department. Various numerical and non-numerical algorithms studied, flow-charted, programmed in PL/I and computer tested.

**May select any 2xx course if proficient in two higher level languages.*

CSC 211. COBOL AND FILE STRUCTURES. (3) Prerequisite: CSC 100 or equivalent. A study of COBOL and its use in file manipulations. Covers concepts of field, record, block, sequential access, random access, sorting, merging, updating, etc. Both business and non-business uses of file systems will be derived and machine tested.

CSC 212. A COMPARATIVE STUDY OF PROGRAMMING LANGUAGES. (3) Prerequisite: CSC 100 and knowledge of at least two higher level computer languages. Numeric and non-numeric algorithms in the procedural languages, COBOL, ALGOL, etc.; discussion and comparison of the relative strengths and weaknesses of the various representative programming languages and appropriate areas of application.

CSC 223. INTRODUCTION TO NUMERICAL METHODS. (3) Prerequisite: CSC 100 or CSC 110 or CSC 112 and MAT 142. Solutions of equations; interpolation and approximations; numerical differentiation and integration; and numerical solution of initial value problems in differential equations. Selected algorithms will be programmed for the digital computer.

CSC 240. ASSEMBLY LANGUAGE, MACHINES, SYSTEMS. (3) Prerequisite: CSC 100 or equivalent. Computer structure, addressing techniques, symbolic coding, macros, internal representations and assembly systems.

CSC 241. SYSTEMS PROGRAMMING. (3) A continuation of CSC 240. Program segmentation and linkage, loaders, reentrant coding, interrupts and traps, resource allocation, pushdown stores, and construction of assemblers and input/output routines.

CSC 260. DATA BASE DESIGN AND IMPLEMENTATION. (3) Prerequisite: CSC 100 and knowledge of at least two computer languages. An introduction to the design of large data files, the implementation of these files in an appropriate programming language and their applications. Emphasis will be on advanced programming techniques with participation in the actual construction of a file system.

CSC 273. LOGIC AND ALGORITHMS. (3) Prerequisite: Sophomore standing. Set algebra; elements of the theory of graphs; Boolean Algebra; propositional logic; and Markov Algorithms and Turing machines.

CSC 341. COMPUTER ORGANIZATION. (3) Prerequisite: junior standing, at least 6 hrs. of CSC and consent of the department. Basic digital components; data representation and transfer; digital storage and accessing; control functions; input/output facilities; machine description, organization, simulation. Survey of various computer architectures.

CSC 343. ADVANCED SYSTEMS PROGRAMMING. (3) Prerequisite: CSC 341. Batch processing, multiprogramming, multiprocessing and real-time systems. Structure of operating sys-

tems, parallel processing of input/output and interrupt handling, information sharing, virtual memory and virtual machines.

CSC 361. INFORMATION STRUCTURES. (3) Prerequisite: CSC 240 and junior standing. Description of a data base and its structure; concepts of records, files, trees and lists; sorting, searching and merging of information files, referencing and cross referencing of files.

CSC 390. SEMINAR. (1-6) Prerequisite: junior standing plus consent of the department.

CSC 391. SEMINAR. (1-6) Prerequisite: junior standing plus consent of the department. A continuation of CSC 390.

CSC 431. COMPUTER SIMULATION. (3) Prerequisite: CSC 100, MAT 322, junior standing and consent of the department. A study of simulation as a tool of computer science or applied mathematics. Introduction of a simulation language such as DYNAMO or GASP and simulation methodology. Topics will include the design of simulation models, discrete and continuous systems and optimization techniques. Selected applications will also be covered.

CSC 450. SENIOR PROJECT. (3) Prerequisite: senior standing or consent of the department. An individual research project under the direction of a faculty member. The project shall have the teaching, theory or application of computer sciences as its main emphasis and shall be of benefit to the department, university or urban community. The project shall be approved by a departmental committee before it is initiated and the results reviewed by the committee before a grade is assigned.

CSC 451. SENIOR PROJECT. (3) Prerequisite: CSC 450. A continuation of CSC 450.

DEPARTMENT OF PHYSICS

Chairman: Associate Professor Oberhofer
Professors: Pollak, Vermillion
Associate Professors: Mayes, Melton
Assistant Professor: Corwin
Lecturer: Lipham

A major in physics leading to the B.A. degree consists of a minimum of 120 semester hours which fulfill the general degree requirements of the University. A minimum of 32 semester hours in physics with an average grade of *C* in the major area is required. The minimum 32 hours must include Physics 221, 222, 231, 241, 251, 252, 291, 491 and at least nine additional hours at the 300/400 level.

A major in physics leading to the B.S. degree consists of a minimum of 120 semester hours which fulfill the general degree requirements of the University. A mimimum of 43 semester hours in physics with an average grade of *C* in the major area is required. The minimum 43 hours must include Physics 221, 222, 231, 241, 251, 252, 291, 321, 331, 341, 351, 361 or 371, 491 and at least six additional hours at the 300/400 level to be approved by the department.

For either program a first year sequence of Physics 101 and 102, or Chemistry 101 and 102 is recommended. Students should note that Mathematics 141, 142, 241, 271 or their equivalents are prerequisites for various required physics courses. Freshmen should arrange their mathematics schedule so as to complete Math 141 before beginning the sophomore year.

COURSE DESCRIPTIONS

PHYSICS

Astronomy

PHY 103. INTRODUCTION TO ASTRONOMY. (3) Historical beginnings of astronomy. Motions of celestial bodies. Introduction to space science. The solar system. Optical and radio astronomy. Structure and evolution of stars. Galaxies, cosmology. Three lecture hours each week. If taken together with 103L, the combination can be counted toward the general degree requirement in natural science.

PHY 103L. INTRODUCTION TO ASTRONOMY LABORATORY. (1) Prerequisite or corequisite: PHY 103. Experimental investigations relating to the acquisition of and interpretation of astronomical data. One three-hour laboratory each week.

Physics

PHY 101. INTRODUCTORY PHYSICS I. (4) Introduction to the fundamental principles of natural phenomena. Topics will be selected from traditional classical subjects (e.g., Newtonian mechan-

ics, electromagnetism) and more recent developments in order to illustrate the logical structure of modern science. Three lecture and three laboratory hours each week.

PHY 102. INTRODUCTORY PHYSICS II. (4) Prerequisite: PHY 101. A continuation of PHY 101. Three lecture and three laboratory hours each week.

PHY 105. BASIC CONCEPTS AND TEACHING METHODS IN PHYSICAL SCIENCE. (4) Intended primarily for students in teacher education. Content, process and attitude of science are explored, along with methods for teaching science to children. Topics include basic scientific concepts such as energy, interaction, relativity of motion, scientific model, as well as teaching strategies and their relationship to theories of learning and development, such as Piaget's theory. May not be counted toward the eight hour general degree requirement in natural science. Six laboratory/class hours per week.

PHY 221. DYNAMICS. (3) Prerequisite: MAT 141. Kinematics and dynamics of particles; momentum, work, energy; conservation laws, mechanics of rigid bodies. Three lecture hours a week.

PHY 222. WAVES AND THERMAL PHYSICS. (3) Prerequisites: PHY 221 or ESM 241; MAT 142. Fluid mechanics and elastic properties of matter; oscillations and waves in elastic media; sound; heat and an introduction to thermodynamics and the kinetic theory of gases. Three lecture hours a week.

PHY 231. ELECTRICITY AND MAGNETISM. (3) Prerequisites: PHY 221 or 222; MAT 142. Electric and magnetic fields in free space and in matter; electrostatic potential and capacitance; elementary circuit theory; electromagnetic induction and inductance; introduction to Maxwell's equations. Three lecture hours a week.

PHY 241. INTRODUCTION TO MODERN PHYSICS. (3) Prerequisites: PHY 102 or PHY 231; MAT 120 or MAT 141. An introduction to such topics as the atomic structure of matter, quantum physics, electronic structure of atoms, wave nature of matter, physics of the solid state, nuclear structure, radioactive decay, fission and fusion, and special relativity. Three lecture hours a week.

PHY 251. EXPERIMENTAL PHYSICS I. (1) Corequisite: PHY 221. The first course of a laboratory sequence developing toward open-ended experiments designed to illustrate physical principles, to develop experimental technique and to encourage individual investigation by the student. PHY 251 involves chiefly experiments in classical mechanics. One three-hour laboratory each week.

PHY 252. EXPERIMENTAL PHYSICS II. (2) Prerequisite: PHY 251. Corequisite: PHY 231. Experiments in electricity and magnetism. One three-hour laboratory each week.

PHY 290. SEMINAR I. (0) Films, lectures, demonstrations and reports on recent developments in physics, historical reviews of specific areas, student and faculty projects or research. A term paper or other presentation may be required. Meets once every other week. May be repeated.

PHY 291. SEMINAR II. (1) Prerequisite: PHY 290. Continuation of PHY 290. A term paper or other presentation will be required in most cases. May be repeated for up to two hours of credit.

PHY 311. A.C. CIRCUITS AND ELECTRONICS. (4) Prerequisites: PHY 231 and PHY 252. An introduction to A.C. circuit theory and electronics and an emphasis on the function and behavior of the individual components of an electronic circuit. Two hours of lecture and one three-hour laboratory each week.

PHY 321. CLASSICAL MECHANICS I. (3) Prerequisites: PHY 221; MAT 241 and 271. The first course of a two-semester sequence treating particle dynamics, the motion of systems of particles, rigid body motion, moving coordinate systems. Lagrange's equations, Hamilton's equations and small oscillations. Three lecture hours a week.

PHY 331. ELECTROMAGNETIC THEORY I. (3) Prerequisites: PHY 231; MAT 241 and 271. The first course of a two-semester sequence. Topics considered include electrostatics and magnetostatics in free space and in matter, the motion of charged particles in electric and magnetic fields, capacitance, dielectric theory, field energy, electromagnetic induction and inductance, vector and scalar potentials, magnetic properties of matter. Maxwell's equations, solutions of Maxwell's equations in free space and in matter, propagating electromagnetic waves, and boundary value problems. Three lecture hours a week.

PHY 341. QUANTUM PHYSICS I. (3) Prerequisites: PHY 231 and 241, MAT 241 and 271, or consent of the department. Empirical necessity for quantum physics. Postulates of quantum physics. Analytical study of quantum physics of the atom. Three lecture hours a week.

PHY 345. STATISTICAL PHYSICS. (3) Prerequisites: PHY 231 and 241, or consent of the department. Introduction to the microscopic foundations for macroscopic systems. Kinetic theory and introductory statistical mechanics. Three lecture hours a week.

PHY 351. ADVANCED LABORATORY IN WAVES AND OPTICS. (2) Prerequisite: PHY 252. Selected laboratory work primarily in geometrical optics, physical optics and microwaves. Three hours of laboratory each week.

PHY 361. ADVANCED LABORATORY IN MODERN PHYSICS. (2) Prerequisites: PHY 241 and PHY 252, or PHY 241 and consent of department. Selected laboratory work in such areas as atomic spectra, radioactive decay, and the interaction of radiation with matter. Three hours of laboratory each week.

PHY 371. ADVANCED LABORATORY IN MECHANICS. (2) Prerequisite: PHY 252. Selected laboratory work in the area of classical mechanics. Topics are chosen for their relation to important principles and techniques or for their historical significance. Three hours of laboratory each week.

PHY 395. TOPICS IN PHYSICS. (0-4 semester hours credit. May be repeated with approval of the department.) Prerequisite: consent of the department. Used to comply with requests for special topics which are introductory in nature.

PHY 397. INTERNSHIP IN COMMUNITY EDUCATION AND SERVICE. (3) Prerequisites: junior standing, acceptance into the internship program, and approval by the Physics Department. Co-requisite: SBS 398. A project oriented, service-learning internship with cooperating community organizations. Credit toward departmental requirements in physics will not be granted for this course. May be repeated once with permission of the Physics Department. This course is offered on a pass/no-credit basis.

PHY 411. NUCLEAR PHYSICS. (3) Prerequisites: PHY 231 and 241, and MAT 271. A study of the nucleus, radioactivity, nuclear reactions, fission, fusion, interactions of radiation with matter, and measurement of radiation. Three hours lecture per week.

PHY 421. CLASSICAL MECHANICS II. (3) Prerequisite: PHY 321. Continuation of PHY 321. Three lecture hours a week.

PHY 431. ELECTROMAGNETIC THEORY II. (3) Prerequisite: PHY 331. Continuation of PHY 331. Three lecture hours a week.

PHY 441. QUANTUM PHYSICS II. (3) Prerequisite: PHY 341. Continuation of PHY 341 with selected applications from atomic, molecular, solid state and nuclear physics. Three lecture hours a week.

PHY 490. SEMINAR III. (0) Continuation of PHY 290 and 291. May be repeated.

PHY 491. SEMINAR IV. (1) Prerequisite: PHY 490. Continuation of PHY 490. May be repeated for up to two hours of credit.

PHY 495. SELECTED TOPICS IN PHYSICS. (0-4 semester hours credit may be repeated with approval of the department.) Prerequisite: consent of department. Used to comply with requests for more advanced special topics.

College of Social and Behavioral Sciences

Dean: Professor Schul

The College of Social and Behavioral Sciences includes the Criminal Justice Program, the Service-Learning Internship Program, the Venture Program and the departments of Geography and Earth Sciences, Political Science, Psychology, and Sociology and Anthropology.

SERVICE-LEARNING INTERNSHIP PROGRAM

Program Coordinator: Assistant Professor Panyan

The service-learning Internship Program in Community Education and Service is designed as an area-wide academic program with credit in the College of Social and Behavioral Sciences.

The following are the overall objectives of the internship program:

—To identify relationships between the student's academic program and the problems and prospects of modern urban communities.

—To enable students to become involved in solving problems of the urban community.

—To provide manpower for governmental and service agencies in local metropolitan communities.

—To encourage youth to consider careers and/or citizen leadership in urban administration and service. To establish a closer relationship between institutions of higher education and the Charlotte area communities by making the resources of the University more accessible to the community and by providing a basis for keeping curriculum, teaching, and research relevant to the needs of the community and society.

Interns will receive six semester hours of academic credit, with grading on a *P/NC* basis, for their completion of the Program in Community Education and Service by enrolling in the following courses in the College of Social and Behavioral Sciences (SBS) at the University of North Carolina at Charlotte:

COURSE DESCRIPTION

SBS 480. INTERNSHIP. (3 or 6) Prerequisites: junior standing, acceptance into the program, and approval of the student's major department. A project-oriented, service-learning internship with

cooperating community organizations. Includes a seminar for the analysis of needs in the urban community, the responses being generated to meet them, and the relationship between internship experiences and the student's academic growth. Amount of credit to be determined by the number of hours of the field experience.

VENTURE PROGRAM

Director: Lee Reading

This program is an experiential learning process which attempts to meet several fundamental needs complementary to the student's education. It utilizes a wilderness setting and small-group dynamics in order to increase the student's understanding of self, interpersonal relationships and the environment.

COURSE DESCRIPTIONS

SBS 399. VENTURE. (3) A field experience course which utilizes a wilderness setting and small-group dynamics in order to increase the student's understanding of self-interpersonal relationships and the environment. The course is action-oriented with one experience building upon another. The emphasis is on an interdisciplinary approach.

NOTE: The student's major department has the option of recognizing this credit as fulfilling departmental requirements. Evaluation will be on a *Pass/No Credit* basis which does not apply against the four courses allowed on a *Pass/No Credit* option for UNCC students.

For further information concerning this program, contact the Office of the Dean, College of Social and Behavioral Sciences.

CRIMINAL JUSTICE PROGRAM

Director: Associate Professor Adams
Assistant Professor: Hirschel
Lecturers: Memory, Jardine
Lecturers (Part-time): Bondy, Black

Students desiring the academic study of crime, delinquency, and the criminal justice system, a career in the criminal justice field, or preparation for graduate study may select the criminal justice curriculum leading to a Bachelor of Science degree. A major in criminal justice requires 30 semester hours of criminal justice courses, including CJ 300—General Criminal Justice, CJ 301—Criminal Justice Theory, and CJ 302—Research Methods in Criminal Justice.

A minimum of a *C* average in all criminal justice coursework and at least a *C* in CJ 300, CJ 301 and CJ 302 is required. Criminal justice majors must complete a concentration in Corrections, Criminal Justice Planning and Administration, Criminal Justice Research and Evaluation or General Criminal Justice. Concentrations involve

criminal justice courses and courses from other disciplines. The General Criminal Justice concentration is available only to students holding an associate degree with a major in a criminal justice area. Those students may satisfy the requirements for the General Criminal Justice concentration by the completion of six semester hours of approved 300 or 400 level criminal justice coursework related to the major completed as part of the associate degree.

Eighteen semester hours of the 30 semester hours of required criminal justice courses must be taken as 300 and 400 level coursework.

Criminal justice majors must also complete 15 semester hours of approved related work in accounting, economics, geography, philosophy, political science, psychology, religion, or sociology, involving at least three departments. All majors are required to complete Math 101, and Math 122 or a course in social measurement which serves as a prerequisite for CJ 302—Research Methods in Criminal Justice.

CONCENTRATIONS

Corrections (12 semester hours)

CJ	478	Community Corrections Subsystems (required)
CJ	479	Institutional Corrections Subsystems (required)
CJ	490	Practicum in Corrections
CJ	495	Directed Individual Study in Corrections
CJ	499	Topics in Corrections
SOC	362	Social Control
SOC	380	Field of Social Work
SOC	481	Methods of Social Work
PSY	296	Introduction to the Experimental Analysis of Behavior
PSY	481	Psychological Counseling and Psychotherapy
HDL	463	Guidance: Behavior and Growth

Criminal Justice Planning and Administration (12 semester hours)

CJ	469	Criminal Justice Planning and Administration (required)
CJ	490	Practicum in Criminal Justice Planning and Administration
CJ	495	Directed Individual Study in Criminal Justice Planning and Administration
CJ	499	Topics in Criminal Justice Planning and Administration
PSC	383	Administrative Behavior
PSC	384	Decision Making in Public Administration
PSC	387	Urban Administration
PSC	300	Selected Topics in Political Science (Public Administration)
SOC	415	Sociology of Complex Organizations

Criminal Justice Research and Evaluation (12 semester hours)

CJ	459	Applied Criminal Justice Research (required)
CJ	490	Practicum in Criminal Justice Research and Evaluation
CJ	495	Directed Individual Study in Criminal Justice and Evaluation
CJ	499	Topics in Criminal Justice Research
PSC	390	Political Measurement (*or*)
SOC	254	Quantitative Sociological Analysis
PSY	504	Tests and Measurements
CSC	101	Introduction to Computer Concepts (*or*)
CSC	100	Algorithmic Languages I
MAT	211	Introduction to Operations Research
MAT	221	Introduction to Probability
PSC	392	Introduction to Survey Research

General Criminal Justice

An Associate degree with a major or concentration in a Criminal Justice sub-field.

Six (6) hours of 300 and 400 level courses in the area of the Associate degree.

COURSE DESCRIPTIONS

CRIMINAL JUSTICE

CJ 300. GENERAL CRIMINAL JUSTICE. (3) Prerequisite: junior standing. All components of the criminal justice system are reviewed and their interrelatedness assessed. Empirical description and tests of the various segments of the system are covered. The role of criminal justice practitioners as professionals is discussed.

CJ 301. CRIMINAL JUSTICE THEORY. (3) Prerequisite: junior standing. Some empirical tests of theories and consideration of theory construction are included. This course focuses upon theories of the criminal justice system as a system and gives particular attention to the systemic relationship between its component parts, inputs, conversion processes, outputs and feedbacks.

CJ 302. RESEARCH METHODS IN CRIMINAL JUSTICE. (4) Prerequisite: junior standing, one statistics course or social measurement course and CJ 300 or consent of instructor. The development of research designs, data collection methods and data analysis most relevant to criminal justice are covered. Traditional criminal justice statistics are discussed. Emphasis is placed on sources of criminal justice information and the skills involved in a thorough criminal justice literature review. There is a focus on research problems of particular interest to the criminal justice system and on unique constraints operating on research within that system. Three lecture hours and one laboratory period of two hours a week.

CJ 438. JUVENILE JUSTICE SUBSYSTEMS. (3) Prerequisite: junior standing. The nature, sources and types of laws concerning juveniles are considered. The focus is on legal bases of delinquency and the role of juvenile justice as a subcomponent of the larger criminal justice system. Particular attention will be given the systemic linkages of the juvenile justice system and the problems of interfacing the juvenile justice system with the larger criminal justice system.

CJ 439. CRIMINAL JUSTICE AND THE LAW. (3) Prerequisite: junior standing. This course examines the nature, origins and objectives of the criminal sanction as it is developed and applied by the criminal justice system. It places particular emphasis upon the roles played by statutory and procedural law in the area of law enforcement, prosecution and corrections.

CJ 449. ETHICS AND THE CRIMINAL JUSTICE SYSTEM. (3) Prerequisite: junior standing. The course focuses on ethical issues related to the administration of justice.

CJ 459. APPLIED CRIMINAL JUSTICE RESEARCH. (3) Prerequisite: one research methods course and junior standing. Significant research studies of criminal justice programs, policies and agencies are evaluated, with special attention to methodological matters. Emphasis is placed on the pragmatic implications of the research findings.

CJ 469. CRIMINAL JUSTICE PLANNING AND ADMINISTRATION. (3) Prerequisite: junior standing and one planning or administration course. Individual and group studies in the dynamics of criminal justice administration and planning are covered, emphasizing the social and psychological aspects of organization and management. Policy formulation, personnel supervision and planning in a criminal justice agency are discussed. Special problems of local, state, regional and national criminal justice planning agencies are considered.

CJ 478. COMMUNITY CORRECTIONS SUBSYSTEMS. (3) Prerequisite: junior standing. The structure, functions and effectiveness of community corrections are considered. Techniques in clinical criminal justice and the impact of community corrections on other elements of the criminal justice system are discussed.

CJ 479. INSTITUTIONAL CORRECTIONS SUBSYSTEMS. (3) Prerequisite: junior standing. The structure, functions and effectiveness of institutional corrections are considered. Techniques in clinical criminal justice and the impact of institutional corrections on other elements of the criminal justice system are discussed.

CJ 488. LAW ENFORCEMENT SUBSYSTEMS. (3) Prerequisite: junior standing. The organization and operation of law enforcement and security agencies are considered. Particular attention is given to the relationship between law enforcement subsystems and other components of our system of criminal justice. The evolving role

of law enforcement and its position in theories of social control are discussed.

CJ 489. LAW ENFORCEMENT AND COMMUNITY RELATIONS. (3) Prerequisite: junior standing. Factors contributing to cooperation or friction between law enforcement personnel and the community, with an emphasis on minority groups, social pressures, and cultural problems, are discussed.

CJ 490. CRIMINAL JUSTICE PRACTICUM. (1-6) Prerequisite: consent of the instructor and the criminal justice agency, and CJ 300. Supervised exposure to a criminal justice problem of special interest to the student. May be repeated for credit up to a maximum of six total hours.

CJ 495. DIRECTED INDIVIDUAL STUDY. (1-4) Prerequisite: junior standing, consent of the director, and one 300-level CJ course. Supervised investigation of a criminal justice problem of special interest to the student. May be repeated for credit.

CJ 499. TOPICS IN CRIMINAL JUSTICE. (1-6) Prerequisite: consent of the program. Examination of specialized criminal justice topics selected by students and faculty. May be repeated for credit.

CJ 438. JUVENILE JUSTICE SUBSYSTEMS. (3) Prerequisite: junior standing. The nature, sources and types of laws concerning juveniles are considered. The focus is on legal bases of delinquency and the role of juvenile justice as a subcomponent of the larger criminal justice system. Particular attention will be given the systemic linkages of the juvenile justice system and the problems of interfacing the juvenile justice system with the larger criminal justice system.

CJ 439. CRIMINAL JUSTICE AND THE LAW. (3) Prerequisite: junior standing. This course examines the nature, origins and objectives of the criminal sanction as it is developed and applied by the criminal justice system. It places particular emphasis upon the roles played by statutory and procedural law in the area of law enforcement, prosecution and corrections.

CJ 449. ETHICS AND THE CRIMINAL JUSTICE SYSTEM. (3) Prerequisite: junior standing. The course focuses on ethical issues related to the administration of justice.

CJ 459. APPLIED CRIMINAL JUSTICE RESEARCH. (3) Prerequisite: one research methods course and junior standing. Significant research studies of criminal justice programs, policies and agencies are evaluated, with special attention to methodological matters. Emphasis is placed on the pragmatic implications of the research findings.

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DEPARTMENT OF GEOGRAPHY AND EARTH SCIENCES

Chairman: Professor Nunnally
Professors: Clay, Orr, Schul, Stuart
Associate Professor: Lord
Assistant Professors: Bedford, Catau, Hopkins, Ingalls, Ives, Lemmon, Walcott
Lecturers: Furuseth, Simpson, Wilson
Lecturer (part-time): Olsen

The department offers two majors, one in Geography, the other in Earth Science.

Geography Major

A major in Geography leading to the B.A. Degree consists of 28 hours of Geography and Earth Sciences and will include Geography 102, 105, 202 and 203 and Earth Science 101. Except for required courses, all work offered for the major must be in courses numbered 300 or above. Majors are expected to take additional work in computer science, economics, history, political science, sociology and statistics or other related areas. Any student who wishes to pursue graduate study in Geography or to be recommended for non-teaching professional employment in the field should expect to take Geography 450.

Students who are working toward teacher certification may elect to take a modified program under which Geography 202 and 203 are not required and may be substituted for by any other six hours of 300 or higher numbered course work in Geography (but not in Earth Sciences).

Earth Science Major

A major in Earth Science leading to the B.A. Degree consists of a minimum of 35 semester hours and will include Earth Science 101, 102 and 340. The remaining 24 hours will be selected from other Earth Science courses and/or from an approved list of related Geography courses. The selection of other courses for the major and in related work is to be made by the student in consultation with the faculty adviser, based primarily on the student's interest in one of the four program options:

(1) General Earth Science—a liberal arts option for the non-career oriented student.
(2) Preparation for Graduate Study—students interested in advanced work in geology, meterology, oceanography or physical geography should complete the appropriate selection of courses in the major plus at least mathematics through calculus, one year of physics and one year of chemistry.
(3) Teacher Certification—students who plan to teach earth science should take a broad selection of courses within the major as well as meet established teacher certification requirements.

(4) Applied Earth Sciences—students interested in earth sciences as they apply to human problems can develop plans of study which range from broad environmental planning considerations to applications of earth science technologies. Related work should be taken in mathematics, the natural sciences, engineering and the planning aspects of the social sciences.

COURSE DESCRIPTIONS

GEOGRAPHY

GGY 102. WORLD REGIONAL GEOGRAPHY. (3) A world regional study which emphasizes the distinctly human responses of man to various geographic situations throughout the world. The nature and development of cultural regions will be studied.

GGY 105. THE LOCATION OF HUMAN ACTIVITY. (3) An examination of factors which account for the locational characteristics of economic and other human activities. The locational decision-making process is examined as a means of understanding human spatial behavior.

GGY 202. ELEMENTARY CARTOGRAPHY. (3) Emphasis to be focused on tools of map making, map design and construction and the interpretation of aerial photographs and topographic maps. One lecture hour and two laboratory periods of two hours a week.

GGY 203. INTRODUCTION TO GEOGRAPHIC RESEARCH. (3) An examination of research design and resources in geographic study including emphasis on spatial models and other quantitative tools applicable to geographic research.

GGY 301. GEOGRAPHY OF LATIN AMERICA. (3) A regional study of the basic human and physical differences from place to place which affect economic, social and political conditions of the Latin American countries.

GGY 302. GEOGRAPHY OF POLAR REGIONS. (3) A study of the Arctic and Antarctic regions with particular emphasis on the history of exploration, the physical environment and political significance.

GGY 303. GEOGRAPHY OF ANGLO-AMERICA. (3) The geographic structure of the United States and Canada with emphasis on both the physical environment and the patterns of human activities.

GGY 304. GEOGRAPHY OF NORTH CAROLINA. (3) A study of physical, social and economic patterns in North Carolina.

GGY 305. GEOGRAPHY OF EUROPE. (3) A regional study of geographic conditions and their relationship to economic, social and political problems of Europe.

GGY 308. GEOGRAPHY OF EAST ASIA. (3) A regional study emphasizing the relationships that exist between the physical environment and the cultural patterns in geographic regions of China, Korea, Japan and the nations of Southeast Asia.

GGY 309. GEOGRAPHY OF SOUTH AND SOUTHWEST ASIA. (3) A regional study emphasizing the relationships that exist between the physical environment and the cultural patterns in geographic regions of the Indian subcontinent and the Arabian peninsula.

GGY 311. POLITICAL GEOGRAPHY. (3) A study of the concepts of political geography as developed through topical studies of political phenomena as related to geographical features. Contemporary problems in international affairs will be considered.

GGY 312. POPULATION GEOGRAPHY. (3) A study of spatial variations in the size, composition, distribution and growth of population. The causes and implications of geographic differences in fertility, mortality and especially migration are discussed.

GGY 313. MANUFACTURING GEOGRAPHY. (3) A study of factors relating to the nature, locations and development of manufacturing industries. Emphasis upon classification of manufacturers, principal areas of manufacturing and the role of manufacturing in regional development.

GGY 314. RESOURCE PLANNING. (3) A study of the resources of the world, especially as they pertain to population, their use and misuse and present conservational practices as they relate to planning for future resource adequacy.

GGY 315. THE REGION AND PLANNING. (3) The regional concept and its application to urban and regional planning. Emphasis to be upon the techniques used in regional analysis.

GGY 316. GEOGRAPHY OF TERTIARY ACTIVITY. (3) A study of spatial attributes of retail and wholesale activities, service facilities and financial establishments. Emphasis upon location research and delineation of trade and service areas.

GGY 317. THE GEOGRAPHY OF TRANSPORTATION SYSTEMS. (3) The study of those geographical and human factors which affect the movement of goods and people from place to place. Emphasis will be placed on transportation routes and networks, commodity flow patterns and the locational implications of freight rates.

GGY 318. GEOGRAPHY OF PRIMARY ACTIVITIES. (3) A study of the functional and spatial attributes of primary economic activities, including agriculture, fossil fuels and other minerals, forestry and fisheries. Emphasis upon a models approach.

GGY 319. GEOGRAPHY OF INDUSTRIAL ACTIVITY. (3) The analytical study of the principles that affect the geographic distri-

bution of manufacturing activity. Emphasis will be on theory, model building and the practical application of theory to geographic research. Also covered will be the role of industrial activity in regional development and planning. Although not required, students should generally plan to take GGY 313 first.

GGY 320. THE CITY AND ITS REGION. (3) A study of the regional system of cities in terms of their size, spacing, historical evolution, functional relationships and future prospects.

GGY 321. INTERNAL STRUCTURE OF THE CITY. (3) An integrative study of the spatial structure of cities with emphasis on land use patterns and models, transportation systems, residential concentrations, commercial activities and manufacturing zones.

GGY 323. BEHAVIORAL GEOGRAPHY. (3) A study of various information processing and decision making models that affect locational choices. The primary emphasis is on the application of these models to the analysis of environmental preferences, human behavior in natural hazard zones, urban social and economic locational behavior and land use planning.

GGY 331. AIR PHOTO INTERPRETATION. (3) The examination and interpretation of aerial photographs with the aid of stereoscopes. Emphasis is to be placed on the identification of physical and cultural features and their patterns. One lecture hour and two laboratory periods of two hours a week.

GGY 332. ADVANCED CARTOGRAPHY. (3) Prerequisite: GGY 202. Preparation of maps, figures and charts at a professional level of competence. Techniques to be emphasized include scribing and various related photographic processes in addition to conventional pen and ink methods. Two laboratories of three hours each week.

GGY 350. ADVANCED GEOGRAPHIC ANALYSIS. (3) Prerequisite: GGY 203 or consent of instructor. An examination of advanced analytical methods in geography. The course will include multi-variate analysis and complex spatial models. Course will include computer usage.

GGY 402. SELECTED TOPICS IN GEOGRAPHY. (3) Prerequisite: consent of instructor. An intensive study of topics in geography. Topics will be offered from such areas as urban, manufacturing, tertiary activity, transportation, primary activity and political geography. Topics will vary from semester to semester. May be repeated for credit.

GGY 450. INDIVIDUAL STUDY IN GEOGRAPHY. (1-4) Permission of the department must be obtained and credit hours established in advance. May be repeated for credit. Tutorial study of special research problems.

EARTH SCIENCE

ES 101. EARTH SCIENCE-GEOGRAPHY. (4) A study of basic geographical principles and processes in earth science; the earth—its position and motions; the grid system; weather; climate; the waters; soils; and vegetation. Three lecture hours and one period of approximately two hours in the audio-visual-tutorial lab every week.

ES 102. EARTH SCIENCE-GEOLOGY. (4) A study of the basic geological principles and processes in earth science; the earth as a planet; treatment of physical processes shaping the earth; earth materials and landforms. Three lecture hours and one laboratory period of two hours a week.

ES 330. BIOGEOGRAPHY. (3) An introduction to the biosphere with focus on structure, processes and patterns. Three hours per week with occasional field work integrated into course.

ES 335. SOIL SCIENCE. (3) Application of soil processes to management and use of soils. Three hours per week with occasional field work integrated into course.

ES 340. FIELD METHODS IN THE EARTH SCIENCES. (3) Prerequisite: ES 101 and 102 or consent of instructor. Introduction to field techniques used in geology, geomorphology, hydrology, soil science and vegetation surveys. Two hours of lecture and one three-hour lab per week.

ES 341. NATURAL ENVIRONMENTS OF NORTH AMERICA. (3) A study of the physiographic regions of the United States, the genesis and pattern of the major landforms included within each, their distinctive characteristics and their cartographic interpretation.

ES 342. METEOROLOGY. (3) An introduction to atmospheric phenomena, weather producing processes, weather forecasting and weather effects upon man's activities.

ES 343. WEATHER ANALYSIS LABORATORY. (1) Pre-or co-requisite: ES 342 or consent of instructor. An introduction to weather observation and techniques of weather forecasting. One two-hour lab per week.

ES 345. MICROCLIMATE: URBAN ENVIRONMENTS. (3) ES 101 or introductory physics are recommended. Principles of micrometerology/climatology using examples from urbanized areas. Analysis of local-scale climates and man-made modification of these environments.

ES 346. CLIMATOLOGICAL DATA ANALYSIS. (1) Prerequisite: GGY 203 or Statistics. Pre- or corequisites: ES 342 or ES 345 or ES 347 or consent of instructor. Methods of acquiring and analyzing climatological data in various types of applied problems. One two-hour lab per week.

ES 347. GLOBAL CLIMATES. (3) The global pattern of climates and climate producing factors. Climatic effects in relation to man and man's effect upon climate.

ES 350. MINERALS AND ROCKS. (4) Formation processes, composition and identification of rocks and minerals in the earth's crust with important abundance or special use. Three lectures and one lab two hours per week.

ES 353. SEDIMENTARY PROCESSES. (3) Prerequisite: ES 102 or consent of instructor. Origin, dispersion, deposition, diagenesis, classification and general distribution of sedimentary materials; principles of physical stratigraphy and biostratigraphy. Three hours per week with occasional field work integrated into course.

ES 354. GEOLOGIC HISTORY OF THE APPALACHIANS. (4) Prerequisites: ES 102 and 350, or consent of instructor. An examination of the history of the Appalachian system (including Coastal Plain) emphasizing methods of interpreting the geologic record. Topics include classification and measurement of geologic time; spatial and temporal relations of rocks; geologic structures and fossils in the Appalachians; and evolution of the Appalachians in terms of plate tectonics.

ES 355. GEOLOGICAL MAPPING AND INTERPRETATION. (4) A field-oriented study of the principles of structural geology and lithology. Prerequisite: ES 102 and ES 350. Two lecture hours and four laboratory hours per week.

ES 361. LANDSCAPE EVOLUTION. (4) Prerequisite: ES 102. Treatment of the processes shaping the earth's surface, genesis of landforms, and the theories related to landform development. Three lecture hours and one laboratory period of two hours a week.

ES 365. PHYSICAL AND GEOLOGICAL OCEANOGRAPHY. (3) A study of the ocean environment emphasizing the ocean's place in planet Earth's energy exchange systems. Emphasis also on the ocean as a complex solution, topography of the ocean floor, sedimentation and coastline morphology.

ES 367. HYDROLOGIC PROCESSES. (3) Prerequisite: ES 101 or 102 or equivalent. An introduction to the atmospheric, soils and geologic aspects of surface and ground water processes. Three hours per week with occasional field work integrated into course.

ES 370. INTRODUCTION TO ENVIRONMENTAL PROBLEMS. (3) Prerequisite: consent of the instructor. The study of major problems in the human environment.

ES 371. ENVIRONMENTAL QUALITY MANAGEMENT. (3) A study of concepts and techniques used in the design and implementation of air and water resource management plans.

ES 372. ENVIRONMENTAL IMPACT ANALYSIS. (3) Prerequisite: 15 hours of earth sciences, including ES 340. A survey of

environmental impact requirements and associated procedures, guidelines and methods of assessing physical environmental impacts. Three hours per week of combined lecture and supervised field work.

ES 380. ENVIRONMENTAL EARTH SCIENCES. (3) Integration of cultural and physical aspects of environmental degradation. Introduction to environmental aspects of earth materials, natural earth hazards, conservation and recycling of resources and environmental planning.

ES 385. ENVIRONMENTAL GEOCHEMISTRY. (4) Prerequisites: ES 102 and CHE 101, CHE 102 or consent of instructor. Geochemical factors relating to man and the environment including chemistry of the biosphere, lithosphere and atmosphere, geochemical cycles and the chemical effect of man on his ecosystem. Three lecture hours and one two-hour lab per week.

ES 404. CONCEPT DEVELOPMENT IN EARTH SCIENCE. (3) Prerequisite: consent of the instructor. Examination of major concepts in earth science with emphasis on implementing their instruction at the primary and secondary school levels. One lecture hour and two laboratory periods of two hours each week.

ES 405. SELECTED TOPICS IN EARTH SCIENCES. (3) Prerequisite: consent of instructor. An in-depth treatment of specific topics selected from one of the fields of the earth sciences. To provide increased specialization in various fields beyond the 300-level course. Topics will vary from semester to semester. May be repeated for credit.

ES 460. INDIVIDUAL STUDY IN EARTH SCIENCES. (1-4) Permission of the department must be obtained and credit hours established in advance. Tutorial study or special research problems. May be repeated for credit.

DEPARTMENT OF POLITICAL SCIENCE

Chairman: Professor Lyons
Professor: Jamgotch
Associate Professors: Backman, Fleitas, McCoy, Mundt
Assistant Professors: Arrington, Brenner, Dorin, Kyle, Panyan, Stowe
Instructor: Heilig

A major in Political Science for the B.A. degree requires: (1) 30 semester hours of political science to include PSC 490 (Scope of Political Science) and one of the following three courses: PSC 390 (Political Measurement), PSC 391 (Research Methods) and/or PSC 392 (Survey Research); and (2) 18 semester hours of course work in no more than two of the following disciplines: anthropology, business, black studies, computer science, economics, geography, history, mathematics, philosophy, psychology and sociology. All 18 hours may be taken in a single discipline—for example, sociology or history; or, any other combination may be used, such as 12 hours in sociology and six hours in psychology. With an adviser's approval, a student may elect to do 18 hours of related work on an interdisciplinary topic. No more than 9 hours of credit from PSC 399 (Practicum in Applied Political Science), PSC 400 (Independent Study) and/or PSC 480 (Internship in Political Science) can be offered to fulfill major requirements for a political science major.

Students may opt to receive the Bachelor of Arts in political science with a concentration in international studies. A concentration in international studies shall include at least 18 hours (of a total of 30) in courses listed in the *Catalog* under international relations, comparative politics and area studies. Majors are encouraged to diversify their course work in international studies by taking 24 hours in at least three of the following fields: anthropology, comparative literature, comparative sociology, comparative religions, geography, international business, economics and trade, modern foreign language and 19th and 20th century history. (The fulfillment of this requirement satisfies the department's general related work requirement.)

The offerings including introductory courses are divided into six major areas as follows:

1. American Politics: Political Science 110, 301, 303, 305, 307, 309, 311, 312, 313, 314, 315, 316, 317, 318, 319, 321, 322, 323.

2. Comparative Politics: Political Science 130, 331, 332, 335, 336, 337, 341, 343, 345, 346, 347, 348, 349.

3. International Relations: Political Science 150, 353, 357, 359, 360, 361, 362, 365, 469.

4. Political Theory: Political Science 371, 373, 374, 375.

5. Public Administration: Political Science 383, 384, 386, 387.

6. Scope and Methods of Political Science: Political Science 390, 391, 392, 490.

COURSE DESCRIPTIONS

POLITICAL SCIENCE

PSC 110. INTRODUCTION TO AMERICAN POLITICS. (3) Role of the President, Congress, Supreme Court and national administrative agencies in the American political system. Relationship between the American people and their political institutions with emphasis upon political culture, the electoral process, interest groups, political communication and the international commitments of the United States.

PSC 130. INTRODUCTION TO COMPARATIVE POLITICS. (3) Political comparisons among nations. Diverse geographical emphases, including some of the following: Latin America, the Atlantic communities of the West, Central and Eastern Europe, the Middle East, Africa, Central Asia, East Asia and Southeast Asia.

PSC 150. INTRODUCTION TO INTERNATIONAL POLITICS. (3) Analysis of politics among nations: material and psychological sources of national power, the role of law, force, and diplomacy in world politics, problems of peace and disarmament, and international organization.

PSC 150L. INTRODUCTION TO INTERNATIONAL POLITICS LABORATORY. (1) (Simulation Section). The laboratory experience will address itself to the simulation of a complex phenomenon known as "international behavior." One laboratory period of two hours per week.

PSC 300. SELECTED TOPICS IN POLITICAL SCIENCE. (1-4) An intensive study of a political topic. The particular topic investigated may vary from semester to semester, and a student may take more than one course under this number.

AMERICAN POLITICS

PSC 301. POLITICAL SOCIALIZATION. (3) The study of the processes by which the political culture of the society is transmitted, formally and informally, to individual members. The course examines the learning process, the agents of socialization, the content of the learning and the consequences of political socialization for the functioning of the political system.

PSC 303. PUBLIC OPINION AND THE MASS MEDIA. (3) The nature and influence of public opinion and the effects of the news media on public opinion and political behavior. The course emphasizes research on the development and content of public opinion and social psychological studies on the process of opinion change.

PSC 305. ELECTORAL BEHAVIOR. (3) An examination of the psychological, sociological and political variables that influence

voting behavior and that affect electoral stability and change. The course emphasizes studies derived from survey research.

PSC 307. ETHNIC POLITICS. (3) The role of racial, religious and nationality groups in American politics.

PSC 309. POLITICAL PARTIES AND INTEREST GROUPS. (3) Analysis of the role played by political parties and interest groups in the American political system.

PSC 311. THE CONGRESS. (3) Analysis of the role of the Congress in the American political system and its relationships with the other branches of government. The course includes study of the recruitment and socialization of congressmen, the committee system and roll call analysis.

PSC 312. THE PRESIDENCY. (3) Analysis of the role of the Presidency in the American political system and its relationships with the other branches of government. The course includes study of the strategies of presidential nomination and election, the sources and indicators of presidential power, how those who have held the office have shaped it and been shaped by it.

PSC 313. JUDICIAL BEHAVIOR. (3) Survey of the empirical studies concerning the determinants of the behavior of judges.

PSC 314. AMERICAN CONSTITUTIONAL LAW. (3) Examines the development of American constitutionalism, with a major emphasis on the roles played by the Supreme Court in the emergence of the American political system. Studies the justices as intellectual personalities engaged in the formulation of national policies. Utilizes Supreme Court decisions and opinions, histories, biographies and political science analyses to study the evolution of governmental powers and individual rights from colonial America through the end of the Roosevelt Court or Stone Court in 1946.

PSC 315. CIVIL RIGHTS AND LIBERTIES. (3) An analysis of Supreme Court decisions relating to civil rights and liberties.

PSC 316. JUDICIAL PROCESS. (3) Analysis of the structure and functions of federal and state courts in the context of the American political system. Emphasis upon the roles of judges, juries, counsel, litigants, police, interest groups and other actors in the adjudication processes.

PSC 317. POLITICS OF CRIMINAL LAW. (3) This course studies the politics of the Supreme Court interactions with the Congress, Presidency, Justice Department and the states in the formulation of policies related to the criminal law.

PSC 318. LAW AND SOCIAL CHANGE. (3) Examines the relationship between law and social change. Places particular emphasis upon the strengths and weaknesses of courts in bringing about societal changes.

PSC 319. STATE POLITICS. (3) Comparative analysis of the 50 states, utilizing socioeconomic characteristics, structural traits and policy outputs as the primary variables of interest.

PSC 321. URBAN POLITICS. (3) Analysis of the political process in the nation's metropolitan areas and the adjustments and responses of the U.S. governmental system in attempting to cope with the urban crisis.

PSC 322. CONTEMPORARY URBAN PROBLEMS. (3) A study of selected urban problems, including an analysis of the causes and consequences of governmental policies designed to cope with these problems. Topics of interest would include: crime and law enforcement, poverty and welfare, urban transportation, education, pollution, housing and redevelopment, and urban revenue and expenditure patterns.

PSC 323. WOMEN AND POLITICS. (3) An examination of the political roles played by women as elected officials, bureaucrats, and appointed board members. Focuses on the recruitment, activities and special problems of women in politics.

COMPARATIVE POLITICS AND AREA STUDIES

PSC 331. THE NATURE OF POLITICAL CHANGE. (3) Comparative study of political change with reference to problems of reform, revolution and nation-building.

PSC 335. POLITICAL VIOLENCE. (3) This course is designed to address four questions: (1) What is political violence? (2) Why does it occur? (3) What is its relationship to other political processes? (4) What is its impact on society? The emphasis of this course, while drawing on examples from contemporary American and foreign scenes, is on examining manifestations of violent political behavior such as pathological violence, conspiratorial violence, collective violence and governmental violence.

PSC 336. COMPARATIVE URBAN POLITICS. (3) Urban growth, urban problems, and political response in cross-national perspective. Focus on the urban policy process including political explanations for variations in national urban growth and urban structure. Attention to selected case and comparative studies on the U.S., Europe, Latin America, Africa and Asia.

PSC 337. POLITICAL CORRUPTION. (3) The use of public office for private ends in the United States and in comparative perspective.

PSC 341. GOVERNMENT AND POLITICS OF WESTERN EUROPE. (3) Comparative analysis of selected West European governments including Great Britain, France, Germany and Italy.

PSC 343. AFRICAN POLITICS. (3) A comparative perspective on the politics of independence in sub-Saharan Africa and on the

performance of the new political systems there in terms of national and international integration and the modernization of traditional societies and economies.

PSC 345. GOVERNMENT AND POLITICS OF THE SOVIET UNION. (3) The origins of Bolshevism and the substance and role of Marxist-Leninist ideology. The structure and functions of the Communist Party of the Soviet Union (CPSU). The principles of Soviet politics and the instruments of rule. The Soviet political system in transition and its relationship to world communism.

PSC 346. COMMUNIST POLITICS IN COMPARISON. (3) Studies the most dynamic features of communist public order systems including the Soviet Union, Poland, Czechoslovakia, Hungary, Yugoslavia, Cuba and the People's Republic of China. Compares ideologies, party leaderships, youth movements, interest groups, political dissent and the politics of human mobilization and national development.

PSC 347. GOVERNMENT AND POLITICS OF LATIN AMERICA. (3) Comparative study of the political development of Latin American political systems with reference to selected aspects and problems of contemporary politics in the region.

PSC 348. POLITICS IN THE PEOPLE'S REPUBLIC OF CHINA. (3) Revolution, ideology and organization in communist China. The origins, development and maintenance of the Chinese political system. Cross-national comparison with other communist and mobilization systems.

PSC 349. GOVERNMENT AND POLITICS OF ASIA—DEMOCRATIC SYSTEMS. (3) Political behavior and the growth of democratic political institutions in selected Asian states, particularly Japan. Emphasis on the nature of political change and political process—political participation and recruitment, political socialization, party systems and voting behavior, policy formation. Cross-national comparison with non-Asian democratic systems.

INTERNATIONAL RELATIONS

PSC 353. POLITICAL FOUNDATIONS OF INTERNATIONAL ORDER. (3) The structure, processes and problems of general and regional international organizations, and the origins and contemporary role of international law.

PSC 357. AMERICAN FOREIGN POLICY. (3) The evolution of U.S. national interests and contemporary decision-making. Explores national and international determinants and emphasizes learning through formal debates focused upon U.S. policies and crisis behavior.

PSC 357L. AMERICAN FOREIGN POLICY LABORATORY. (1) The laboratory experience will allow students to simulate the decision-making process of the United States government in the

solution of key foreign policy issues. One laboratory period of two hours per week.

PSC 359. SOVIET FOREIGN POLICY. (3) The concepts, content and evolution of Soviet foreign relations, with emphasis upon change and continuity in Russian and Soviet policies. Contemporary problems of Soviet diplomacy with other world powers and with the Marxist Leninist nations of the Communist international system.

PSC 360. COMPARATIVE FOREIGN POLICIES. (3) Comparative analysis of the foreign policies of both large and small nation-states. This course, with the use of comparative approaches, focuses on the major variables within and outside contemporary states that influence the nature of their foreign policies. Of particular importance will be the examination of both variables on foreign policy under specifiable conditions and the policy-making apparatus of each state.

PSC 361. PROBLEMS OF DEFENSE AND NATIONAL SECURITY POLICY. (3) Investigates major concepts of war and the problems of arms control, escalation and the proliferation of nuclear weapons. Examines trends and conditions of international conflict, technological change and domestic political environments as they relate to defense and national security.

PSC 362. INTERNATIONAL LAW. (3) An historical and political analysis of the sources and development of international law. Particular attention is given to the role of modern international law in the relations of nation-states and its application to contemporary global problems.

PSC 365. EAST ASIA IN WORLD AFFAIRS. (3) An examination of the basic factors governing East Asia's role in world affairs, both traditionally and in the present day.

PSC 469. THEORIES OF INTERNATIONAL POLITICS. (3) Prerequisites: PSC 130 or 150 and consent of the instructor. Survey of major theories in the field, with emphasis on contemporary, empirically based approaches of theory building. The focus of the course will include a range of theories from a variety of disciplines which attempt to explain the phenomena of politics in international and transnational contexts.

POLITICAL THEORY

PSC 371. HISTORY OF CLASSICAL POLITICAL THOUGHT. (3) Major concepts and systems of political thought from Plato to the seventeenth century.

PSC 373. HISTORY OF MODERN POLITICAL THOUGHT. (3) Major concepts and systems of political thought from the seventeenth century to the present.

PSC 374. CONTEMPORARY SYSTEMATIC POLITICAL THEORY. (3) A review of the major contemporary theorists who

present a comprehensive and systematic analysis, evaluation or prescription of politics. Both normative and empirical approaches will be used in studying twentieth century democratic theory, systems analysis, group theory power concepts and neo-Marxian and conservative ideologies.

PSC 375. LEGAL THOUGHT. (3) An analysis of such law-related issues as justification for criminal punishment, the obligation to obey the law, the enforcement of morals and war and morality.

PUBLIC ADMINISTRATION

PSC 383. ADMINISTRATIVE BEHAVIOR. (3) The role of the administrator and public bureaucracy in modern democratic society. Particular attention will be given to the interplay of forces created by executives, legislators, political parties and interest groups.

PSC 384. DECISION MAKING IN PUBLIC ADMINISTRATION. (3) An examination of the major schools of decision making theory: rationalism, incrementalism and mixed-scanning. The use of these approaches in public administration in areas of budgeting, organization and program design, and personnel will be studied, using problem sets and simulation techniques.

PSC 386. POLITICS OF PLANNING. (3) An examination of the governmental planning process with an emphasis on the land-use and growth management systems of urban areas. The processes and impacts of local, regional, state, and federal planning will be discussed.

PSC 387. URBAN ADMINISTRATION. (3) A study of administration in the context of the urban setting. Attention will be given to urban governmental bureaucracies, their response to and interaction with their environments, and their roles in developing urban policy.

SCOPE AND METHODS OF POLITICAL SCIENCE

PSC 390. POLITICAL MEASUREMENT. (3) An introduction to the use of quantitative techniques in the analysis of political data. The course emphasizes the understanding of measurement concepts and introduces the student to practical applications in working with quantitative data.

PSC 390L. POLITICAL MEASUREMENT LABORATORY. (1) One two-hour laboratory period per week. The laboratory is required for successful completion of PSC 390 and is to be taken concurrently with PSC 390. The laboratory is open only to students who are enrolled in PSC 390.

PSC 391. RESEARCH METHODS IN POLITICAL SCIENCE. (3) An introduction to research methods in political science to include a brief consideration of the following topics: philosophy of science literature; the place of research methods in the discipline of political

science; research design; research strategies and techniques; data interpretation.

PSC 391L. RESEARCH METHODS LABORATORY. (1) One two-hour laboratory period per week. The laboratory is required for successful completion of PSC 391 and is to be taken concurrently with PSC 391. The laboratory is open only to students who are enrolled in PSC 391.

PSC 392. INTRODUCTION TO SURVEY RESEARCH. (3) An examination of the purposes, logic and procedures of survey research in the study of political attitudes and behavior. The major steps in survey research—planning, sampling, questionnaire design, data collection, processing data and analysis—will be reviewed. The student will have an opportunity to apply newly acquired skills in a field situation.

PSC 399. PRACTICUM IN APPLIED POLITICAL SCIENCE. (1-3) Prerequisite: permission of the instructor. This course provides students with the opportunity to apply political science concepts in a simulated (real-world) setting under the supervision of a faculty member. (May be repeated for credit with departmental permission.)

PSC 400. INDEPENDENT STUDY. (1-3) Prerequisite: consent of the instructor. Supervised investigation of a political problem that is (1) of special interest to the student; (2) within the area of the instructor's special competence; and (3) normally an extension of previous course work with the instructor. A student may take more than one course under this number.

PSC 480. INTERNSHIP IN POLITICAL SCIENCE. (3-6) The student receives a practical experience in politics by working for a party, campaign organization, political office holder, news media, government agency or other political organization. Minimum of 150 working hours for 3 hours credit; minimum of 300 working hours for 6 hours credit. No more than six credits may be received by any student through this course.

PSC 490. SENIOR PROJECT. (3) Prerequisite: PSC 390, 391 or 392. The student completes an article length research paper or other project under the direct supervision of a member of the faculty. The paper or project must involve quantitative or other methods of modern political analysis. In seminar fashion the students and a faculty member will meet to discuss and criticize the senior projects.

DEPARTMENT OF PSYCHOLOGY

Chairman: Professor Grimsley
Professor: Diamant
Associate Professors: Lamal, Long, Simono, Sohn, Wachowiak
Assistant Professors: Calhoun, Cann, Fernald, Goolkasian, Maisto, Park, Selby, Siegfried, Terry, Toner, Wetherington, Windholz
Lecturer: Lamberth, Tedeschi
Lecturers (part-time): Bondy, J. Long, Williams

A major in psychology leading to the B.A. degree consists of 29 semester hours of psychology including General Psychology (101 and 101L), Research Methodology (241), History and Systems of Psychology (461) and a senior seminar (491, 492, 493, 494, 495, 496, 497, 498).

Other course requirements for majors are MAT 122 (Elements of Statistics), two courses from the subject area of biology, chemistry, earth science or physics and six hours of social science exclusive of psychology.

The additional courses necessary to fulfill the 29 hour requirement of the major should be selected to aid the student in the attainment of higher goals. However, the student cannot include more than three hours credit in Psychology 489 and three hours credit in Psychology 490 in the 29 hour requirement of the major. Students considering graduate school are strongly urged to take courses in basic psychological processes, eg., learning, sensation and perception, physiological psychology.

The Psychology Department offers course sequences designed to provide a more in depth exposure to certain areas of psychology. Sequences are currently available in Behavior Modification, Child Psychology, Clinical Psychology, Industrial Psychology and Psychometrics. Detailed information about these sequences is contained in the Psychology Department Student Handbook which is available in the Psychology Office.

Related work consists of 18 semester hours which are to be arranged by the student and the faculty adviser. Related work should be considered in terms of the fulfillment of the individual's vocational and educational goals. Students who receive teacher certification may use the education sequence as related work.

RECOMMENDED CURRICULUM FOR THE B.A. DEGREE IN PSYCHOLOGY

Freshman Year

Psychology 101	3	Psychology (202, 203, 210, 220, 230, or 271)	3
Psychology 101L	1	Humanities	3
Math 101 or 103*	3	Math 122 for SBS	3
Natural Science (with lab; either biology chemistry, earth science, or physics)	4	Natural Science (either biology, chemistry, earth science, or physics)	3-4
English	3	English	3
	14		15-16

Sophomore Year

Psychology 241	4	Psychology (200 or 300 level)	6
Social Science	3	Related Work	3
Related Work	3	Social Science	3
Elective	3	Elective	3
Humanities	3		
	16		15

Junior Year

Psychology (300 level and above)	3-6	Psychology (300 level and above)	3-6
Related Work	6	Related Work	6
Electives	3-6	Electives	3-6
	15		15

Senior Year

Seminar in Psychology	3	Seminar in Psychology	3
or		or	
Psychology 461	3	Psychology 461	3
Electives	12	Electives	11
	15		14

COURSE DESCRIPTIONS

PSYCHOLOGY

PSY 101. GENERAL PSYCHOLOGY. (3) A survey of the field including such topics as learning, emotions, motivation, personality, psychological testing and abnormal behavior. Emphasis on psychology as a behavioral science. May be taken with or without the lab. All

*Students who seek certification in early childhood and elementary education should take Math 130 and 131 instead of 101. They will then take Math 122, and Psy 241 will be taken one semester later.

psychology majors and those who wish to apply this course as partial fulfillment of the University science requirement must take PSY 101L during the same semester in which they take PSY 101.

PSY 101L. GENERAL PSYCHOLOGY LABORATORY. (1) Two one-hour laboratory periods per week. An introduction to laboratory equipment and procedures. (May not be taken apart from the lecture portion of PSY 101 except by psychology majors who have permission of the department.)

PSY 202. EDUCATIONAL PSYCHOLOGY. (3) Prerequisite: PSY 101. The psychology of learning; problems related to concept formation and application of behavior modification techniques to the classroom.

PSY 203. PSYCHOLOGY OF ADJUSTMENT. (3) Prerequisite: PSY 101. The study of the process of adjustment. Consideration is given to psychological reactions to critical problems encountered in modern life. Introduction to different approaches to psychotherapy.

PSY 210. DEVELOPMENTAL PSYCHOLOGY. (3) Prerequisite: PSY 101. A detailed discussion of the principles of psychological change from infancy to old age, with a consideration of genetic, physiological and environmental determinants.

PSY 220. CHILD PSYCHOLOGY. (3) Prerequisite: PSY 101. Psychological development in infancy and childhood, including the development of learning, thought, language, social relations, intelligence and morality. Remedial measures suggested in dealing with early child tendencies which might otherwise lead to severe academic and social difficulties.

PSY 230. ADOLESCENT PSYCHOLOGY. (3) Prerequisite: PSY 101. Developmental and psychological characteristics of adolescence. Research methods and familiarity in case study emphasized. School and personality problems studied.

PSY 241. RESEARCH METHODOLOGY. (4) Prerequisites: PSY 101, PSY 101L and MAT 122. An introduction to methods of psychological research including experimental, observational and correlational. Basic concepts of philosophy of science will also be discussed. Emphasis on methodology rather than content but the applicability of methods to current topics in psychology is covered. Three lecture hours and one two-hour laboratory period a week.

PSY 271. INTRODUCTION TO INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY. (3) Prerequisite: PSY 101. The study of people at work: what motivates people to work and what leads to satisfaction, alienation or performance; how to lead others; the structure of an organization and processes of communication, decision making and conflict; socialization through selection and training; measurement of individual contribution; the design of work itself; ways to change and develop entire organizations.

PSY 296. INTRODUCTION TO THE EXPERIMENTAL ANALYSIS OF BEHAVIOR. (4) Prerequisite: PSY 101. An analysis of the methods and constructs of the experimental analysis of behavior including the application of the methods to laboratory research. Three lecture hours and one two-hour laboratory period a week.

PSY 301. BASIC PROCESSES IN PSYCHOLOGICAL ASSESSMENT. (3) Prerequisites: PSY 101 and PSY 101L, MAT 122. An analysis of the basic issues and processes in psychological testing, including scaling procedures, reliability and validity, correlational techniques used in test construction, a review of various kinds of psychological tests and basic approaches to test interpretation.

PSY 303. SOCIAL PSYCHOLOGY. (3) Prerequisite: PSY 101. The social behavior of man. Man's behavior in relation to other individuals. Attitude change, social conflict, social interaction, social perception, and social influence processes are some of the specific topics treated. General theories of social behavior and research approaches are also considered.

PSY 305. PSYCHOLOGY OF PERSONALITY. (3) Prerequisite: PSY 101. Current personality theories. Consideration given to psychoanalytic, physiological, trait and factor, the perceptual viewpoints in the light of contemporary research.

PSY 307. ABNORMAL PSYCHOLOGY. (3) Prerequisite: PSY 101. A history of psychopathology. Case studies, differential diagnosis, psychological dynamics of abnormal behavior, including theoretical, clinical and experimental contributions in the field.

PSY 310. COMPARATIVE PSYCHOLOGY. (3) Prerequisite: PSY 101. An introduction to the study of animal and human behavior from a comparative point of view. Emphasis on the classification of behavior patterns as well as the origin and development of these patterns.

PSY 311. PSYCHOLOGY OF LEARNING. (3) Prerequisite: PSY 101. (Completion of PSY 241 is strongly recommended.) A survey of the major theories and empirical findings in the area of learning.

PSY 312. MOTIVATION. (3) Prerequisite: PSY 101. (Completion of PSY 241 is strongly recommended.) A study of the current theories and research in the area of human and animal motivation.

PSY 313. SENSATION AND PERCEPTION. (3) Prerequisite: PSY 101. A survey of sensory and perceptual processes, including such topics as psycho physics, information processing and color perception.

PSY 320. COGNITIVE AND LANGUAGE DEVELOPMENT. (3) Prerequisites: PSY 101 and PSY 220. A study of the research on the development of language, thought and related behaviors in

children, including information processing, Piaget's theory of cognitive development, acquisition of sentence structure and biological foundations of language.

PSY 321. SOCIAL AND PERSONALITY DEVELOPMENT. (3) Prerequisites: PSY 101 and PSY 220. A study of the research on social and personality development of children, including infant social behavior, socialization practices, independence and achievement, aggression, sex-role development and moral development.

PSY 372. PSYCHOLOGY OF PERSONNEL: EMPLOYEE SELECTION AND CLASSIFICATION. (3) Prerequisites: PSY 101, PSY 101L, PSY 241 and PSY 271. An analysis of the methods, techniques and procedures used to select and classify employees.

PSY 373. THE PSYCHOLOGICAL BASES OF TRAINING PROGRAMS. (3) Prerequisites: PSY 101, PSY 271, or consent of instructor. Alternative theories about adult learning will be applied to the development and conduct of training programs in industry. Some topics treated include how to develop training needs, a description of methods available to trainers such as programmed instruction and sensitivity training, and how to evaluate the effects of various training techniques.

PSY 396. CONSEQUENCES AND THE SOURCES OF BEHAVIOR CONTROL. (4) Prerequisite: PSY 296. An analyses of the application of the principles and techniques of the experimental analysis of behavior to a variety of behavior problems in a number of different environments with an emphasis on extrapolation to new and different problems and settings. (Students will be required to develop individualized projects utilizing the material discussed in class.)

PSY 401. TOPICS IN PSYCHOLOGY. (3) Prerequisite: consent of the instructor. Examination of special psychological topics. May be repeated for credit.

PSY 404. INTRODUCTION TO CLINICAL PROCESS. (4) Prerequisites: PSY 307 and PSY 203. Overview of theories of behavior intervention including behavioral management, crisis intervention, and clinical assessment. The course includes a 2 hour lab, involving behavioral rehearsal and practical training techniques.

PSY 420. CHILD PSYCHOPATHOLOGY. (3) Prerequisites: PSY 101, PSY 220 and PSY 307 or the equivalent. Principles of classification, assessment and treatment of children and adolescents who display deviant affective, cognitive and social behavior.

PSY 430. HUMAN COGNITIVE PROCESSES. (3) Prerequisite: PSY 101. A study of the processes involved in such complex human behaviors as language (acquisition and usage), memory and problem solving. Emphasis will be upon experimental findings and current theories.

PSY 451. PHYSIOLOGICAL PSYCHOLOGY. (3) Prerequisite: PSY 101. The relationship of physiological systems to integrated behavior. Emphasis on neural aspects of behavior and current studies in reaction to drug and other stimuli.

PSY 461. HISTORY AND SYSTEMS OF PSYCHOLOGY. (3) Prerequisite: PSY 101. Influential psychological systems and their historical antecedents. Emphasis on Gestalt, Psychoanalytic and behavior theory. Evaluation of current existential influence.

PSY 480. RESEARCH METHODS IN PHYSIOLOGICAL PSYCHOLOGY. (4) Prerequisites: PSY 101 and permission of the instructor. An introduction to current laboratory techniques in physiological psychology, including basic surgeries, lesioning, stimulation and histology. Three lecture hours and one two-hour laboratory period a week.

PSY 481. PSYCHOLOGICAL COUNSELING AND PSYCHOTHERAPY. (3) Prerequisite: PSY 101 and PSY 307. An introduction to the major theories of psychological counseling and psychotherapy with special emphasis on individual techniques including diagnosis.

PSY 489. PRACTICUM IN APPLIED PSYCHOLOGY. (1-4) Prerequisite: permission of the instructor. A course allowing junior and senior students the opportunity to work in practical settings related to psychology under the supervision of a faculty member. (May be repeated for credit with departmental permission. The student must have obtained approval in the semester preceding the semester in which the practicum is to be taken.)

PSY 490. INDIVIDUAL STUDIES IN PSYCHOLOGY. (1-4) Prerequisite: permission of the instructor. A course allowing the student of psychology an opportunity for individualizing study. This study may take the form of initiating, designing and conducting an original research problem or a critique and synthesis of the existing research in his area of interest. May be repeated for credit.

PSY 491. SEMINAR IN HUMAN ADAPTATION AND BEHAVIOR. (3) Prerequisite: senior standing and permission of the instructor. Intensive reading and discussion in selected areas of psychology, such as stress, personality, emotions and psychopathology.

PSY 492. SEMINAR IN SOCIAL PSYCHOLOGY. (3) Prerequisite: permission of the instructor. An intensive study at the advanced level of topics of current research and theoretical interest in social psychology.

PSY 493. SEMINAR IN PHYSIOLOGICAL PSYCHOLOGY. (3) Prerequisite: PSY 101 and permission of the instructor. An intensive study of selected topics in physiological psychology, such as psychopharmocology and neuro-physiological basis of learning and memory.

PSY 494. SEMINAR IN EXPERIMENTAL PSYCHOLOGY. (3) Admission by consent of the instructor. An in-depth examination of an area of current concern in psychological laboratory. Each semester will have a different focus, and such topics as discrimination learning, memory, experimental analysis of behavior, and attention will alternate.

PSY 495. SEMINAR IN DEVELOPMENTAL PSYCHOLOGY. (3) Prerequisite: PSY 101 and permission of the instructor. This seminar will be a concentrated examination of current issues and research in a field of developmental psychology. Such topics as the concept of development in historical and current usage, learning (especially in human infants), development of social relations, intelligence, cognitive abilities and the acquisition of language will be treated in detail.

PSY 496. SENIOR SEMINAR IN BEHAVIOR MODIFICATION. (3) Prerequisite: PSY 296, PSY 396, PSY 489. Discussion and analysis of the current issues in behavior modification, including an integration of principles, techniques, and practical experiences.

PSY 497. SENIOR SEMINAR IN INDUSTRIAL PSYCHOLOGY. (3) Prerequisites: PSY 271 and consent of instructor. Discussion and study of topics of current concern in industrial/organizational psychology and related disciplines. Issues that affect individuals at work and organizations in society will be examined.

PSY 498. SEMINAR IN COMMUNITY PSYCHOLOGY. (3) Prerequisites: PSY 307, 203, or permission of the instructor. This seminar will consist of extensive application of psychological research findings to specific problems in the community. Emphasis is on problems hypothesized to directly affect psychological well-being.

PSY 501. PSYCHOLOGY OF EXCEPTIONAL CHILDREN. (3) Assessing the exceptional child. Emphasis on current research in several diagnostic categories.

PSY 502. ADJUSTMENT PROBLEMS OF THE DISADVANTAGED. (3) A seminar concerned with such issues as racial attitudes, prejudice, and poverty. Assigned reading and discussion deal with the application of psychological principles to these problems. Contributing lecturers with professional experience with problems of the disadvantaged will participate.

PSY 503. PSYCHOLOGY OF MENTAL RETARDATION. (3) An intensive study of the psychological and sociological aspects of mental retardation in relation to adjustment and educational development. Emphasis on current research and diagnostic categories.

PSY 504. TESTS AND MEASUREMENTS. (3) Prerequisite: PSY 101. A survey of psychological and educational measurements in current use. Emphasis will be placed on structure, administration

and application of group tests. Individual tests such as Stanford-Binet, WISC and WAIS will be reviewed.

PSY 505. ADVANCED PERSONALITY THEORY. (3) A critical evaluation of the major personality theories including an extensive survey of current research.

PSY 514. METHODS OF STUDENT EVALUATION. (3) Prerequisite: permission of the instructor. A practical course of construction of teacher-made evaluation procedures. Special emphasis will be placed on writing and item analysis of essay and restricted-response achievement tests.

PSY 520. PSYCHOLOGY OF THINKING. (3) The study of theories of learning, thinking, and cognition, especially as they apply to the educational process.

PSY 599. SELECTED TOPICS IN PSYCHOLOGY. (3) Prerequisites: Junior, Senior or Graduate standing. Examination of special psychological topics.

DEPARTMENT OF SOCIOLOGY AND ANTHROPOLOGY

Chairman: Professor Goodnight
Associate Professors: Dubisch, Ferraro, Hutchison, Lance, Michalowski, Rent
Assistant Professors: Bertoli, Bonney, Cook, Fischer, Forrest, Hayes, Scout
Lecturers: Hicks, Latimore, Ricks
Visiting Lecturer: Pearson
Lecturers (part-time): Barlow, Frye, Patnaik
Adjunct Professor: Robicsek

The Department of Sociology and Anthropology includes the disciplines of sociology and anthropology and the field of social work. Academic majors are available in anthropology and sociology. A variety of social work courses is offered, and plans are under way to expand offerings and further develop the program in this area.

Anthropology

Anthropology is the study of man and his culture and is organized into four sub-fields: cultural anthropology, archeology, physical anthropology and linguistics. It focuses upon his cultural heritage and history and upon the biological aspects of man which relate to his cultural development. It emphasizes the comparative study of man and the cross-cultural analysis of his institutionalized responses to fundamental human needs.

The study of anthropology is relevant for persons whose occupations and endeavors require an understanding of a variety of cultures. It is particularly useful for teachers of students from diverse cultural backgrounds, social workers and persons seeking careers in journalism and communications as well as persons who plan to work in or with foreign countries. It provides competencies needed for employment in such organizations as museums, highway departments (as archeologists), police departments (as physical anthropologists), the park service and the Bureau of Indian Affairs.

Sociology

Sociology is the scientific study of man's social life. It focuses upon the forces which organize and structure societies and smaller groups as well as the forces which disorganize and threaten to dissolve them. As a science, sociology applies an objective and systematic method of investigation to identify the patterns and forms of social life and to understand the processes by which they are established and changed.

The study of sociology is particularly attractive to persons preparing for further study and professional careers as well as persons who are seeking a liberal education and immediate employment. As a liberal arts program, it enables the student to understand the social context in which he finds himself and the social forces which shape his personality, his actions and his interactions with others. As a pre-

professional program it provides a good background for persons entering social work, law, teaching, the ministry, journalism, planning, public relations and personnel services. It also provides analytical skills related to market research and program evaluation in human services, sales, management and other business activities.

Social Work

Social work includes the study and enhancement of human social functioning. It focuses upon the prevention, treatment and control of problems in the social life of individuals, groups and communities. It blends knowledge from the social and behavioral sciences with social work theory and skills in the professional application of the helping relationship.

The study of social work prepares persons for further study and careers in social welfare, including direct social service, family counseling and crisis intervention. It provides an excellent background for careers involving the planning, administration and evaluation of social services. It also provides knowledge and skills utilized by vocational rehabilitation counselors, probation and parole officers, medical and psychiatric social workers and other members of community and industrial social service organizations.

THE PROGRAMS

Anthropology Major

The undergraduate program in anthropology is designed to respond to the following objectives:

1. To examine society and culture scientifically and to develop an understanding of the research process;

2. To examine human behavior from a cross-cultural perspective in order to reduce ethnocentrism and develop a better perspective of one's culture;

3. To examine the interconnections between the biological, cultural, and social bases of human behavior within both contemporary and historical frameworks;

4. To develop an understanding of the interconnections between the various parts of socio-cultural systems and their functional implications for change; and

5. To develop an understanding of anthropological inquiry and how it relates to other scientific and humanistic disciplines.

The anthropology curriculum is designed to familiarize the student with the broad range of anthropological concerns (socio-cultural anthropology, archeology, physical anthropology, and anthropological linguistics; and to enable the student to integrate these

sub-fields into a framework for the holistic understanding of human behavior and evolutionary development. Formal course offerings are supplemented with extra-classroom activities involving the application of anthropological theories and methods to contemporary urbanizing society. Students should consult with the Department of Sociology and Anthropology concerning internships and field schools in anthropology and archeology.

Requirements. As a means of achieving the above objectives, students selecting a concentration in anthropology must satisfy the following requirements:

1. Completion of 31 semester hours of anthropology, including

   a. ANT 101, 301, and 401;

   b. Twenty-one semester hours of electives in anthropology of which at least six semester hours must be taken in cultural anthropology and six semester hours in archeology/physical anthropology; and

2. Completion of 18 semester hours of related work to be arranged in consultation with the student's adviser and organized around a region, an allied discipline or a theme.

SUGGESTED CURRICULUM FOR THE B.A. DEGREE IN ANTHROPOLOGY

Freshman Year

Anthropology 101	3	Anthropology Elective	3
English	3	English	3
Foreign Language or Math	4-3	Foreign Language or Math	4-3
Natural Science	4	Natural Science	4
Humanities	3	Social Science	3
	17-16		17-16

Sophomore Year

Anthropology Electives	6	Anthropology Electives	6
Foreign Language or Elective	4-3	Foreign Language or Elective	4-3
Humanities	3	Social Science	3
Related Work	3	Related Work	3
	16-15		16-15

Junior Year

Anthropology 301	4	Anthropology Electives	6
Related Work	3	Related Work	3
Electives	6	Electives	6
	13		15

Senior Year

Anthropology Elective	3	Anthropology 401	3
Related Work	3	Related Work	3
Electives	9	Electives	9
	15		15

Sociology Major

The undergraduate program in sociology is designed to respond to the needs of individuals and society:

1. To understand themselves, each other, and the interrelationships between individual and society;

2. To comprehend the past and present influence of social factors and their implications for the future;

3. To acquire the perspective and skills necessary for acquiring and applying sociological knowledge; and

4. To predict and control the influence of social factors for the prevention and amelioration of social problems.

The sociology curriculum is designed to familiarize the student with the questions sociologists ask about social reality, the conceptual and methodological tools they utilize to gain answers to these questions and the resultant body of knowledge. It is relatively structured in terms of the number of courses the student is required to take, but it is highly flexible in terms of the freedom to focus upon and become involved in inquiry pertaining to sociological problems of the student's own choosing within each of these courses. Students should consult with the Department of Sociology and Anthropology about internship opportunities in sociology.

Requirements. A major in sociology leading to the B.A. degree consists of (1) a minimum of 29 semester hours of sociology beyond the 100 level including the core curriculum of SOC 151, 253, 254, 354, 355 and 456; and (2) a minimum of 18 semester hours of related work.

Related work is arranged by the student in consultation with an adviser and may consist of a concentration of courses: (1) within a single discipline; (2) selected from two complementary disciplines; or (3) focused upon a specific topic. Students in the teacher certification program may use the courses in the professional education sequences as their related work.

SUGGESTED CURRICULUM FOR THE B.A. DEGREE IN SOCIOLOGY

Freshman Year

Sociology 151	3	Sociology Electives	6
English	3	English	3
Math or Foreign Language	3-4	Math, Logic or Foreign Language	3-4
Natural Science	4	Natural Science	4
Humanities	3		
	16-17		16-17

Sophomore Year

Sociology 253	3	Sociology 354	3
Social Science	3	Social Science	3
Humanities	3	Related Work	3
Related Work	3	Foreign Language or Electives	4-6
Foreign Language or Electives	4-3		
	16-15		13-15

Junior Year

Sociology 355	4	Sociology 254	4
Sociology Elective	3	Sociology Elective	3
Related Work	3	Related Work	3
Elective	3	Electives	6
	13		16

Senior Year

Sociology 456	3	Related Work	3
Related Work	3	Sociology Internship	3-6
Electives	9	Electives	9-6
	15		15

Concentration in Social Work

Students interested in preparing for careers in social work may designate "social work" as the topic around which they will build a related work program. Such a program should be carefully planned to build on and be integrated with knowledge from the humanities, social, behavioral and biological sciences. The following social work courses are required for a related work concentration in social work:

SOC 380. Field of Social Work (3)
SOC 382. Social Welfare Policy (3)
SOC 481. Methods of Social Work (3)
SOC 482. Internship in Social Work (3-6)
SOC 483. Social Work Internship Seminar (3-6)
SOC 490. Foundations in Social Welfare Policy (3)
SOC 490. Human Behavior and Social Environment (3)

Students should consult with the Department of Sociology and Anthropology concerning internship or field placement opportunities and the selection of related courses.

SUGGESTED RELATED WORK SEQUENCE IN SOCIAL WORK

Junior Year

Sociology 380	3	Sociology 481	3
Sociology 490 (HB & SE)	3	Sociology 490 (Foundations)	3

Senior Year

Sociology 382	3	Sociology 482	3-6
Sociology 482	3-6	Sociology 483	3
Sociology 483	3		

COURSE DESCRIPTIONS

ANTHROPOLOGY

ANT 101. GENERAL ANTHROPOLOGY. (3) A general introduction to the four subfields of anthropology, covering such topics as man's biological and cultural evolution; the structure and functions of various institutions in primitive, peasant and modern complex societies; language and culture; and methods of cultural analysis and theories of culture. Prerequisite for all upper level courses in anthropology.

ANT 210. TOPICS IN ETHNOGRAPHY. (3) Prerequisite: General Anthropology. Examination of ethnographic regions of the world selected for study by students and faculty members. May be repeated for credit as the topics vary.

ANT 211. AFRICAN ETHNOGRAPHY. (3) Prerequisite: ANT 101. Examination of traditional social and cultural institutions

among African peoples with particular emphasis on the analysis of traditional economic, political, religious and kinship institutions and their structural implications for change.

ANT 212. NORTH AMERICAN INDIANS. (3) Prerequisite: ANT 101 or consent of the instructor. Comprehensive survey of the native peoples of America, their cultures at the time of European contact, major historical events and relationships, and contemporary issues in Indian affairs.

ANT 213. PEASANT SOCIETY. (3) Prerequisite: ANT 101. Examination of peasant societies, including analysis of general characteristics of peasantry and examination of individual peasant societies. Emphasis is on both the traditional aspects of these societies and on contemporary problems such as modernization, revolution, population growth and world hunger.

ANT 221. KINSHIP AND MARRIAGE. (3) Prerequisite: ANT 101. An examination of types of kinship groups, kinship terminology and behavior, marriage, types of family organization, and sex roles as they relate to kinship.

ANT 222. BELIEF SYSTEMS. (3) Prerequisite: ANT 101. An examination of belief systems, their structure and content, and their role in human behavior. Included will be religion, philosophy, myth, folklore, magic and ritual.

ANT 224. LANGUAGE AND CULTURE. (3) Prerequisite: ANT 101. An examination of the relationship between language and culture including such topics as the Sapir—Whorf hypothesis, componential analysis, dialects, and situation analysis of language.

ANT 225. URBAN ANTHROPOLOGY. (3) Prerequisite: ANT 101. The cross-cultural analysis of urban social structures, including the rise of early cities, analysis of migration and adaptation of rural populations. Varieties in form and function of the city will be examined, along with changes and continuities in family life, economic institutions, religious norms and world view.

ANT 241. PRINCIPLES OF PHYSICAL ANTHROPOLOGY. (3) Prerequisite: ANT 101. A survey of the major components of modern physical anthropology, including principles of heredity and genetics, evolution of man's biological characteristics, race, and the comparative study of primate anatomy, physiology and behavior.

ANT 242. PRIMATE BEHAVIOR. (3) Prerequisite: ANT 101. Examination of primate behavior, with emphasis on field and laboratory studies of apes and Old World Monkeys. The relationship of these studies to the evolution of human behavior and the development of culture will be discussed along with their significance for understanding human behavior today.

ANT 250. TOPICS IN ARCHEOLOGY. (3) Prerequisite: ANT 101. Examination of specialized topics in archeology. May be repeated for credit as topics vary.

ANT 251. WORLD PREHISTORY. (3) Prerequisite: ANT 101. A survey of trends in cultural development, a comparison of representative cultural histories from major world areas, and a survey of major archeological sites, methods, and theories.

ANT 252. NEW WORLD ARCHEOLOGY. (3) Prerequisite: ANT 101. Survey of prehistoric cultures of North, South and Meso-America. Particular emphasis is given to the archeology of eastern North America. Basic archeological methods are outlined.

ANT 253. FIELD SCHOOL IN ARCHEOLOGY. (6) Prerequisite: ANT 101 and the consent of the instructor. Introduction to archeological field methods through participation in actual site excavation. Instruction will be given in excavation procedures, survey techniques, recording, photographing, preservation, cataloging and analysis.

ANT 301. APPLICATIONS OF ANTHROPOLOGICAL THEORY AND METHODS. (4) Prerequisite: ANT 101 and six additional hours in anthropology. Examination of the interrelationship of anthropological theory including the study of the major theoretical approaches and the methods appropriate to them. Students will engage in projects utilizing various methodological techniques for the development and researching of various problems. Three hours of lecture-discussion and two hours of lab each week.

ANT 311. CULTURE CHANGE AND APPLIED ANTHROPOLOGY. (3) Prerequisite: ANT 101. An examination of cultural dynamics, agents and conditions promoting growth, mechanisms of cultural growth, and the application of anthropological theories and methods to domestic and foreign programs of sociocultural change.

ANT 321. CULTURE AND PERSONALITY. (3) Prerequisite: ANT 101 or consent of the instructor. A survey of anthropological contributions to theories of personality formation including data on tribal and national characteristics, patterns of child-bearing, culturally derived aspects of human behavior, deviancy and personal integration with the cultural milieu.

ANT 401. SEMINAR IN GENERAL ANTHROPOLOGY. (3) Prerequisite: ANT 301 and senior standing. The synthesis and integration of the various sub-fields of anthropology through the present presentation of projects to seminar members for criticism and evaluation. The present orientation of the discipline, its uses, and its future will be examined.

ANT 480. INTERNSHIP IN ANTHROPOLOGY. (3-6) Prerequisite: consent of the Department. Research and/or in-service training experience for selected students in cooperating community organizations. Content of each internship will be based upon a contractual agreement between the student, department and community organization. Amount of credit to be determined by the nature and extent of the internship assignment. May be repeated for

credit up to a maximum of six semester hours. Offered only on a *Pass/No Credit* basis.

ANT 490. TOPICS IN ANTHROPOLOGY. (1-3) Prerequisite: ANT 101 and consent of the department. Examination of specialized topics in anthropology. May be repeated for credit as topics vary. Examples of courses which have been taught under this designation are:

ANT 495. DIRECTED INDIVIDUAL STUDY. (1-4) Prerequisite: ANT 101 and consent of the department. Supervised investigation of problems and areas in anthropology of special interest to the student. May be repeated for credit.

SOCIAL WORK

SOC 380. FIELD OF SOCIAL WORK. (3) Prerequisite: consent of the instructor. Description and analysis of the historical development and philosophy of social work and the operation of many specialized social services in contemporary society. (Does not satisfy the general degree requirements for social science.)

SOC 382. SOCIAL WELFARE POLICY. (3) Prerequisite: SOC 380 or the consent of the instructor. Examination of the nature of social welfare policy, how it is developed and the implications of policy for program design and service delivery.

SOC 481. METHODS OF SOCIAL WORK. (3) Prerequisite: SOC 380. Introduction to theories and principles of methods used in working with individuals, groups and communities in correctional, medical, psychiatric and other settings utilizing recent literature and case materials. (Does not satisfy the general degree requirements for social science.)

SOC 482. INTERNSHIP IN SOCIAL WORK. (3-6) Prerequisite: SOC 481 and consent of the department; corequisite: SOC 483. Directed field experience under professional supervision in selected community agencies. Content of each internship will be based upon a contractual agreement between the student, department, and cooperating agency. Amount of credit to be determined by the number of hours of the field experience. May be repeated for credit up to a maximum of six semester hours. Offered only on a *Pass/No Credit* basis.

SOC 483. SOCIAL WORK INTERNSHIP SEMINAR. (3) Corequisite: SOC 482. Analysis and discussion of student internship experiences in relation to established concepts of social work theory and practice. May be repeated for credit.

SOCIOLOGY

SOC 151. INTRODUCTION TO SOCIOLOGY. (3) Introduction to sociology as a discipline, the sociological perspective and the process of sociological inquiry emphasizing fundamental concepts, principles and procedures.

SOC 232. SOCIOLOGY OF THE FAMILY. (3) Prerequisite: SOC 151. Description and analysis of the family as a social institution with special reference to historical and cross-cultural perspectives and the impact of social change on the family and its interrelations with other institutions.

SOC 253. EVOLUTION OF SOCIOLOGICAL INQUIRY. (3) Prerequisite: SOC 151 or the equivalent. Examination of the origins and evolution of fundamental sociological concepts, theories and research procedures and their contributions to sociological inquiry.

SOC 254. QUANTITATIVE SOCIOLOGICAL ANALYSIS. (4) Prerequisite: SOC 253 or consent of the instructor. Examination of concepts and procedures pertaining to sociological inquiry with emphasis on data processing, measurement theory and quantitative models of social analysis. Three hours of lecture-discussion and two hours of laboratory each week.

SOC 271. SOCIAL PROBLEMS. (3) Prerequisite: SOC 151. Analysis of contemporary social problems and their consequences for mankind, with special emphasis upon the problems of American society.

SOC 310. AMERICAN MINORITY GROUPS. (3) Prerequisite: SOC 151. Analysis of the relations between dominant and minority groups in American society with special emphasis on the establishment, maintenance, and decline of dominance involving racial, ethnic and religious minorities.

SOC 321. HUMAN ECOLOGY. (3) Prerequisite: SOC 151. Examination of the patterns and principles of societal adjustments to the physical environment, the distribution of communities and institutions and the dynamics of ecological change.

SOC 322. POPULATION ANALYSIS. (3) Prerequisite: SOC 151. Analysis of patterns of human behavior and ideologies which influence the number, distribution and composition of population and the effect of population characteristics and changes upon society.

SOC 324. SOCIOLOGY OF THE COMMUNITY. (3) Prerequisite: SOC 151. Analysis of the concept of community, methods for delineating and describing the dimensions of community and examination of planned and unplanned community change.

SOC 325. URBAN SOCIOLOGY. (3) Prerequisite: SOC 151. Examination of the origin and development of cities, the ecological and social structure of city and region, the nature and functioning of urban institutions and the process of urban decay and renewal.

SOC 343. SOCIAL MOVEMENTS. (3) Prerequisite: SOC 151. Analysis of collective behavior with emphasis on the ideology, development and organization of movements seeking or resisting change in the social order.

SOC 354. SOCIOLOGICAL INQUIRY: THEORIES AND THEIR CONSTRUCTION. (3) Prerequisite: SOC 254 or consent of the instructor. Systematic analysis of competing and complementary theories in contemporary sociology and the acquisition and application of the basic skills of theory construction.

SOC 355. SOCIOLOGICAL INQUIRY: METHODS OF VERIFICATION. (4) Prerequisite: SOC 354. Examination and application of research principles and techniques for the verification of sociological propositions, including the formulation of the problem, the design of the research, and the collection, analysis and interpretation of the data. Three hours of lecture-discussion and a laboratory period of two hours each week.

SOC 361. SOCIALIZATION AND SOCIETY. (3) Prerequisite: SOC 151. Analysis and process of socialization and social interaction and the sociocultural dimension of personality.

SOC 362. SOCIAL CONTROL. (3) Prerequisite: SOC 151. Analysis of the relation of social norms to conforming and deviant behavior with special attention to public opinion, propaganda and other techniques of social control.

SOC 363. SOCIOLOGY OF SMALL GROUPS. (3) Prerequisite: SOC 151 or consent of the instructor. Systematic analysis and application of theoretical and empirical research pertaining to the behavior of small groups.

SOC 372. SOCIOLOGY OF DEVIANT BEHAVIOR. (3) Prerequisite: SOC 151. Examination of the forms, causes, consequences and control of deviant behavior.

SOC 373. JUVENILE DELINQUENCY. (3) Prerequisite: SOC 151. Sociological analysis of the problem of youth crime with special attention to major sociological and social psychological theories of delinquency causation.

SOC 411. SOCIAL STRATIFICATION: POWER, PRIVILEGES, AND PRESTIGE. (3) Prerequisite: introductory sociology and consent of the instructor. Cross-cultural and comparative analysis of the distributive system of societies focusing upon the explanation of inequality among societies and the variations in power, privilege and prestige.

SOC 413. SOCIOLOGY OF WORK, OCCUPATIONS AND PROFESSIONS. (3) Prerequisite: introductory sociology and consent of the instructor. Analysis of occupational and professional socialization and roles; career patterns and professional ideologies; and occupational structure and change.

SOC 415. SOCIOLOGY OF COMPLEX ORGANIZATION. (3) Prerequisite: introductory sociology and consent of the instructor. Analysis of the structure and dynamics of complex organizations with special attention to rationalization through bureaucracy and the mechanisms of change.

SOC 432. SEMINAR IN CONTEMPORARY AMERICAN FAMILY SYSTEMS. (3) Prerequisites: introductory sociology and consent of instructor. Analysis of the development of modern American family systems, their relationship to American society and their contributions to personality development with special emphasis on conceptual frameworks for family analysis.

SOC 435. SOCIOLOGY OF EDUCATION. (3) Prerequisite: SOC 151 or consent of the instructor. Analysis of the educational institution with emphasis upon the school class as a social system and the school as a social environment and a complex organization.

SOC 456. SEMINAR IN ADVANCED SOCIOLOGICAL INQUIRY. (3) Prerequisite: SOC 355. Synthesis and utilization of basic sociological principles and techniques in supervised independent theorization and verification, including the presentation of projects to seminar members and departmental faculty for evaluation and criticism.

SOC 463. SOCIOLOGY OF SEX ROLES. (3) Prerequisite: SOC 151 or consent of the instructor. Examination of changing sex role behavior in American society. Emphasis is given to socialization into sex roles, institutional sexism and alternative sex role models.

SOC 473. CRIMINOLOGY. (3) Prerequisite: introductory sociology and consent of instructor. Analysis of sociological and psychological research pertaining to crime and crime statistics including historical and contemporary theories of criminal behavior and modern trends in criminal law and corrections.

SOC 480. INTERNSHIP IN SOCIOLOGY. (3-6) Prerequisite: consent of the Department. Research and/or in-service training experience for selected students in cooperating community organizations. Content of each internship will be based upon a contractual agreement between the student, department and community organization. Amount of credit to be determined by the nature and extent of the internship assignment. May be repeated for credit up to a maximum of six semester hours. Offered only on a *Pass/No Credit* basis.

SOC 485. APPLIED SOCIOLOGY. (3) Prerequisite: SOC 355 or consent of the instructor. Exploration of the role of sociologists in law and law enforcement, medicine, social work and social welfare, management, the military establishment, community development, foreign policy, the development of developing countries, urban poverty and planning and the educational system. Emphasis on the adaptation of sociological research methods and theory to temporal and other limitations imposed by the special characteristics of applied research.

SOC 490. TOPICS IN SOCIOLOGY. (1-3) Prerequisite: consent of the department. Examination of specialized sociological topics selected by students and faculty. May be repeated for credit. (A listing and brief description of specific courses offered each term is

available from the departmental office.) Examples of courses which have been offered under this designation are:

POPULAR CULTURE. A sociological analysis of the popular forms of everyday life in America. Fashion, fads, entertainment, automobiles, television and similar topics from the sublime to the ridiculous are analyzed for their underlying significance as part of the American cultural scene. The course will emphasize the dialectic between culture and structure in an attempt to understand the impact of each upon the other.

SEMINAR IN THE SOCIOLOGY OF HOUSING. Housing is examined as both a social and a political variable in the life of man. A cross-cultural perspective is emphasized. Housing is examined as a social problem, as social policy, as an element in community development, in terms of tenant-landlord relationships related to culture, family life cycle, and social stratification.

SOCIAL SCIENCE RESEARCH FOR EDUCATORS. Application of basic social science research techniques to problems of concern to educators. Each student will have an opportunity to select a research problem relevant to his or her interests and proceed through the research process by means of a set of exercises.

SOCIAL SERVICES FOR CHILDREN AND YOUTH. Description and analysis of social welfare programs and practice as these relate to the needs and rights of children including unmet needs, issues and trends, and the uses of planning and research to develop more effective programs.

FOUNDATIONS IN SOCIAL WELFARE POLICY. Examination of the concept of social welfare as a social institution. Attention is given to income maintenance programs, health programs, poverty, discrimination, and social welfare programs in other countries.

SOC 495. DIRECTED INDIVIDUAL STUDY. (1-4) Prerequisite: consent of the department. Supervised investigation of a sociological problem of special interest to the student. May be repeated for credit.

SOC 510. INTERGROUP RELATIONS. (3) Prerequisite: introductory sociology or consent of the instructor. Analysis of the social and social-psychological determinants of intergroup relations through an examination of labor-management relations, race relations, relations between social classes, ethnic, national, and religious groups, and other major social groupings in contemporary societies. Attention will be given to processes which introduce change in patterns of relations.

SOC 525. SEMINAR IN URBAN SOCIOLOGY. (3) Prerequisite: SOC 151 or consent of the instructor. Examination of the origins

and development of the urban environment with emphasis upon social organization, ecology, social psychological attributes and problems of urban life. A cross-cultural perspective will be emphasized.

SOC 557. ADVANCED GENERAL SOCIOLOGY I: SOCIAL STRUCTURE. (3) Prerequisite: consent of the department. Systematic examination of theories and principles of social structure and organization with special emphasis on role and systems analysis and the segmentation and integration of society.

SOC 558. ADVANCED GENERAL SOCIOLOGY II: SOCIOCULTURAL CHANGE. (3) Prerequisite: consent of the department. Systematic examination of the principal theories and principles of sociocultural change with special emphasis on the evolutionary development of societal types, industrialization and urbanization of American society, and transition of developing countries.

BENEFACTIONS

PROFESSORSHIPS

The *American Credit Corporation Professorships in Business Administration* were established by the American Credit Foundation of North Carolina, Inc. The Foundation approved a statement of intent in January, 1967 to contribute $100,000 to be paid over a period of 10 years and to be used for the presentation of a salary supplement or supplements to a distinguished member or members of the faculty of the College of Business Administration, who will be known as *American Credit Corporation Professors of Business Administration.*

The *Robert Lee Bailey Professorship in History* was UNCC's first professorship, established in December, 1965 by Mr. and Mrs. Sanford V. Davenport to honor and reward excellence in teaching by a gift in memory of her brother, Lieutenant Robert Lee Bailey of the 10th Armored Division of the U.S. Army, who was killed in Germany on March 22, 1945, near the end of the conflict in Europe. Born on April 21, 1914, in Concord, he attended Davidson College, and before the war was associated with Broyhill Furniture Company.

The *Celanese Professor of Engineering* is a distinguished professorship in the College of Engineering, which has its salary supplemented by part of the income from the rental of a building donated by the Celanese Corporation and valued at more than $1 million.

The *Charles E. Cullen Professorship* was established in 1973 by the Charlotte Sales and Marketing Executives, Inc. to honor the late "Charlie" Cullen of Charlotte. The professorship consists of an endowment in the amount of $100,000 pledged by Charlotte Sales and Marketing Executives, Inc. The income from the endowment is to provide a salary supplement or supplements for a distinguished professor of marketing in the College of Business Administration.

The *Rush S. Dickson Professorships in Finance* were established in memory of the late Rush S. Dickson of Charlotte. The professorships are made possible through the generous gifts and pledges, totaling $100,000 by the Dickson Foundation of Mount Holly and the Rush S. Dickson Family Foundation of Charlotte. Mr. Dickson established both foundations. The net income from the gifts is used for the payment of a salary supplement or supplements to a distinguished member or members of the faculty of the College of Business Administration in the field of finance.

The *Frank Porter Graham Professorship in Black Studies* was established by Miss Alice Lindsay Tate in honor of the former president of the University of North Carolina, United States senator and United Nations mediator. The income from the professorship fund will be used as a salary supplement to a distinguished member or members of the faculty of the University of North Carolina at Charlotte.

The *Artie Sue Kerley Professorship in Nursing* was established in 1972 by Miss Artie Sue Kerley to provide a salary supplement for a distinguished member of the College of Nursing faculty.

The *Charles H. Stone Fund* was given by Mrs. Stone in memory of her husband, a pioneer in the chemical and dyestuff industry in the South. The grant is dedicated to perpetuating the memory of Mr. Stone and assuring the high quality of chemistry instruction at the University of North Carolina at Charlotte. The net income is used for the payment of a salary supplement to a distinguished member or members of the chemistry faculty, who are designated as "Charles H. Stone Professors of Chemistry." Before World War I, Mr. Stone was employed by a German chemical company, and later he formed his own company in Charlotte and operated it until 1937 when it was purchased by American Cyanamid Company. Mr. Stone remained active with the company until his retirement in 1947. He died October 20, 1963.

NCNB AWARDS

The generosity of the North Carolina National Bank has made possible the NCNB Awards established for the purpose of recognizing and honoring members of the faculty for distinguished service. The NCNB Awards initially are used to reward excellence in teaching by members of the faculty or to honor faculty members for distinguished research and scholarly writing or devoted and sacrificial service to the University and to mankind.

THE FOUNDATION OF THE UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE

The Foundation of the University of North Carolina at Charlotte was founded in 1960 and has had from its inception the goal of undergirding the University and assisting it in the quest for excellence. To accomplish its goals, the Foundation invites private sources to contribute so that needs unmet, or inadequately provided for through state funds, may be met. The Celanese Corporation of America and the Celanese Fibers Company presented a gift in July, 1963, of a manufacturing plant at Burlington, North Carolina, valued at $1,150,000. The income derived from the rental of this plant is used to supplement the salaries of members of the faculty who teach chemistry, engineering, mathematics, physics and related subjects.

Through the 1976-77 academic year, the Directors of the UNCC Foundation have allocated more than $900,000 to the University for salary supplements, faculty research, scholarships and special projects.

Patrons of Excellence is a program established by the Foundation of the University of North Carolina at Charlotte, with the primary initial objective of supplementing the salaries of distinguished faculty members. Under the program *Patrons* pledge a minimum of $1,000 a year for a number of 10 years or may make a donation of at least $10,000 at one time. *Patrons of Excellence* now number 186. The Foundation continues to seek additional *Patrons.*

UNIVERSITY REGULATIONS

THE EXPECTATION OF THE UNIVERSITY

The University expects from its students a decent respect for other human beings, a regard for the law and a willingness to embrace membership in an academic community.

Some regulations are always necessary in a society of men and women. It is the intent of the University to keep the number of such regulations at a minimum and to depend rather upon the acceptance on the part of each individual of his responsibility as a member of the University.

POLICIES, PROCEDURES AND DISCIPLINARY ACTIONS IN CASES OF DISRUPTION OF EDUCATIONAL PROCESS

The policies, procedures and disciplinary actions which will be followed in cases of disruption of the educational process are set forth in the following statement:

Section 1. Policies Relating to Disruptive Conduct

The University of North Carolina has long honored the right of free discussion and expression, peaceful picketing and demonstrations, the right to petition and peaceably to assemble. That these rights are a part of the fabric of this institution is not questioned. They must remain secure. It is equally clear, however, that, in a community of learning, willful disruption of the educational process, destruction of property, and interference with the rights of other members of the community cannot be tolerated. Accordingly, it shall be the policy of the University to deal with any such disruption,destruction or interference promptly and effectively, but also fairly and impartially without regard to race, religion, sex or political beliefs.

Section 2. Definition of Disruptive Conduct

(a) Any faculty member (the term "faculty member," wherever used in this statement, shall include regular faculty members, full-time instructors, lecturers and all other persons exempt from the North Carolina State Personnel System [Chapter 126 of the General Statutes as amended] who receive compensation for teaching, or other instructional functions, or research at the University), any graduate student engaged in the instructional program, or any student who, with the intent to obstruct or disrupt any normal operation or function of the University or any of its component institutions, engages, or incites others to engage, in individual or collective conduct which destroys or significantly damages any University property, or which impairs or threatens impairment of the physical well-being of any member of the University community, or which, because of its violent, forceful threatening or intimidating nature or because it restrains freedom of lawful movement, otherwise prevents any member of the University community from conducting his normal activities within the University, shall be subject to prompt and appropriate disciplinary action, which may include suspension, expulsion, discharge or dismissal from the University.

The following, while not intended to be exclusive, illustrate the offenses encompassed herein, when done for the purpose of obstructing or disrupting any normal operation or function of the University or any of its component institutions: (1) occupation of any University building or part thereof with intent to deprive others of its normal use; (2) blocking the entrance or exit of any University building or corridor or room therein with intent to deprive others of lawful access to or from, or use of, said building or corridor or room; (3) setting fire to or by any other means destroying or substantially damaging any University building or property, or the property of others on University premises; (4) any possession or display of, or attempt or threat to use, for any unlawful purpose, any weapon, dangerous instrument, explosive, or inflammable material in any University building or on any University campus; (5) prevention of, or attempt to prevent by physical act, the attending, convening, continuation or orderly conduct of any University class or activity or of any lawful meeting or assembly in any University building or on any University campus; and (6) blocking normal pedestrian or vehicular traffic on or into any University campus.

(b) Any person engaged in the instructional program who fails or refuses to carry out validly assigned duties, with the intent to obstruct or disrupt any normal operation or function of the University or any of its component institutions, shall be subject to prompt and appropriate disciplinary action under this policy if (but only if) his status is such that he is not subject to the provisions of any trustee or Board of Governors policies governing suspension and discharge of faculty members.

Section 3. Responsibilities of Chancellors

(a) When any chancellor has cause to believe that any of the provisions of this policy have been violated, he shall forthwith investigate or cause to be investigated the occurrence, and upon identification of the parties involved shall promptly determine whether any charge is to be made with respect thereto.

(b) If he decides that a charge is to be made, he shall, within thirty (30) days after he has information as to the identity of the alleged perpetrator of the offense but in no event more than twelve (12) months after the occurrence of the alleged offense, (i) refer the case to the appropriate existing University judicial body, or (ii) refer the matter to a Hearing Committee drawn from a previously selected Hearings Panel which, under this option, is required to implement action for violation of Section 2(a) or (b) of this statement. If the case is referred to an existing University judicial body under (i) above, the procedural rules of that body shall be followed, and subsections (c) through (f) below shall not be applicable. If the matter is referred to a Hearing Committee under (ii) above, the procedural rules prescribed in subsections (c) through (f) below shall be followed.

(c) The accused shall be given written notice by personal service or registered mail, return receipt requested, stating:

(1) The specific violations of this policy with which the accused is charged.

(2) The designated time and place of the hearing on the charge by the Hearing Committee, which time shall be not earlier than seven (7) nor later than ten (10) days following receipt of the notice.

(3) That the accused shall be entitled to the presumption of innocence until found guilty, the right to retain counsel, the right to present the testimony of witnesses and other evidence, the right to cross-examine all witnesses against him, the right to examine all documents and demonstrative evidence adverse to him, and the right to a transcript of the proceedings of the hearing.

(d) The Hearing Committee shall determine the guilt or innocence of the accused. If the person charged is found guilty, the Hearing Committee shall recommend to the chancellor such discipline as said body determines to be appropriate. After considering such recommendation the chancellor shall prescribe such discipline as he deems proper. In any event, whether the person is found guilty or not guilty, a written report shall be made by the chancellor to the president within ten (10) days.

(e) Any person found guilty shall have ten (10) days after notice of such finding in which to appeal to the president of the University. Such an appeal if taken shall be upon the grounds set forth in Section 5.

(f) Any accused person who, without good cause, shall fail to appear at the time and place fixed for the hearing of his cause by the Hearing Committee shall be suspended indefinitely or discharged from University employment.

(g) A chancellor, unless so ordered or otherwise prevented by court, shall not be precluded from carrying out his duties under this policy by reason of any pending action in any state or federal court. Should a delay occur in prosecuting the charge against the accused because the accused or witnesses that may be necessary to a determination of the charge are involved in state or federal court actions, the time limitations set forth above in this Section 3 shall not apply.

(h) Conviction in any state or federal court shall not preclude the University or any of its officers from exercising disciplinary action in any offense referred to in this policy.

(i) Nothing contained in this policy shall preclude the president or any chancellor from taking any other steps, including injunctive relief or other legal action, which he may deem advisable to protect the best interests of the University.

Section 4. Aggravated Acts or Threatened Repetition of Acts.

(a) The chancellor of each of the component institutions of the University shall appoint an Emergency Consultative Panel which

shall be composed of not less than three (3) nor more than five (5) faculty members and not less than three (3) nor more than five (5) students who shall be available to advise with the chancellor in any emergency. No member of such panel shall serve for more than one (1) year unless he be reappointed by the chancellor. The chancellor may make appointments, either temporary or for a full year, to fill any vacancies which may exist on the panel.

(b) If, in the judgment of the chancellor, there is clear and convincing evidence that a person has committed any of the acts prohibited under this policy which, because of the aggravated character or probable repetition of such act or acts, necessitates immediate action to protect the University from substantial interference with any of its orderly operations or functions or to prevent threats to or acts which endanger life or property, the chancellor, with the concurrence as hereinafter provided of the Emergency Consultative Panel established pursuant to (a) above, may forthwith suspended such person from the University and bar him from the University campus; provided, however, that in the event of such suspension, the person suspended shall be given written notice of the reason for his suspension, either personally or by registered mail addressed to his last known addresses, and shall be afforded a prompt hearing, which, if requested, shall be commenced within ten (10) days of the suspension. Except for purposes of attending personally any hearings conducted under this policy, the bar against the appearance of the accused on the University campus shall remain in effect until final judgment has been rendered in his case and all appellant proceedings have been concluded, unless such restriction is earlier lifted by written notice from the chancellor.

(c) A quorum of the Emergency Consultative Panel provided for in (a) above shall consist of not less than four (4) of its members, and the required concurrence shall have been obtained if a majority of such quorum shall indicate their concurrence. The chancellor shall meet personally with members of such panel at the time he seeks concurrence, if it is feasible to do so. However, if the circumstances are such that the chancellor deems it not to be feasible to personally assemble such members, then he may communicate with them or the required number of them individually by telephone or by such other means as he may choose to employ, in which event he may proceed as provided in (b) above after the required majority of such members have communicated their concurrence to him.

(d) In the chancellor's absence or inability to act, the president may exercise the powers of the chancellor specified in this section in the same manner and to the same extent as could the chancellor but for such absence or inability to act.

Section 5. Right of Appeal

Any person found guilty of violating the provisions of this policy by the Hearing Committee referred to in Section 3 shall have the right to appeal the finding and the discipline imposed upon him to the president of the University. Any such appeal shall be in writing, shall be

based solely upon the record, and shall be limited to one or more of the following grounds.

(1) That the finding is not supported by substantial evidence;

(2) That a fair hearing was not accorded the accused; or

(3) That the discipline imposed was excessive or inappropriate.

It shall be the responsibility of the president to make prompt disposition of all such appeals, and his decision shall be rendered within thirty (30) days after receipt of the complete record on appeal.

Section 6. No Amnesty

No administrative official, faculty member, or student of the University shall have authority to grant amnesty or to make any promise as to prosecution or non-prosecution in any court, state or federal, or before any student, faculty, administrative, or trustee committee to any person charged with or suspected of violating Section 2(a) or (b).

Section 7. Publication

The provisions of this policy shall be given wide dissemination in such manner as the president or chancellors may deem advisable, and shall be printed in the official catalogs which may be issued by each component institution of the University.

FIREARMS AND OTHER WEAPONS PROHIBITED

An act to protect persons on the property of any public or private educational institution from persons carrying firearms or other weapons was enacted by the 1971 General Assembly. This act, which is in full force and effect on the UNCC campus, is as follows:

It shall be unlawful for any person to possess, or carry, whether openly or concealed, any gun, rifle, pistol, dynamite cartridge, bomb, grenade, mine, powerful explosive as defined in G.S. 14-284.1, bowie knife, dirk, dagger, sling shot, leaded cane, switch-blade knife, blackjack, metallic knuckles or any other weapon of like kind, not used solely for instructional or school-sanctioned ceremonial purposes, in any public or private school building or bus, on any public or private school campus, grounds, recreation area, athletic field, or other property owned, used or operated by any board of education, school, college, or university board of trustees or directors for the administration of any public or private educational institution. For the purpose of this section, a self-opening or switch-blade knife is defined as a knife containing a blade or blades which open automatically by the release of a spring or a similar contrivance, and the above phrase "weapon of like kind" includes razors and razor blades (except solely for personal shaving) and any sharp pointed or edged instrument except unaltered nail files and clips and tools used solely for preparation of food, instruction and maintenance. This section shall not apply

to the following persons: officers and enlisted personnel of the armed forces of the United States when in discharge of their official duties as such and acting under orders requiring them to carry arms or weapons, civil officers of the United States while in the discharge of their official duties, officers and soldiers of the militia and the national guard when called into actual service, officers of the state, or of any county, city, or town, charged with the execution of the laws of the state, when acting in the discharge of their official duties, any pupils who are members of the Reserve Officer Training Corps and who are required to carry arms or weapons in the discharge of their official class duties, and any private police employed by the administration or board of trustees of any public or private institution of higher education when acting in the discharge of their duties.

Any person violating the provisions of this Act shall be guilty of a misdemeanor and upon conviction shall be punished in the discretion of the court by fine or imprisonment or by both such fine and imprisonment, not to exceed five hundred dollars ($500) fine or six months' imprisonment.

ALCOHOLIC BEVERAGES

State law regulates the possession and use of alcoholic beverages. Excessive and/or inappropriate uses, as defined by state law, are punishable by criminal penalty. Also, because the University community presents a separate and special context in which an environment compatible with academic endeavors must be preserved, additional University regulation of the possession and use of alcoholic beverages on campus is necessary and proper.

It shall be the responsibility of the chancellor or his delegate to adopt and enforce regulations covering the possession and use of alcoholic beverages on the campus of the University.

DRUG ABUSE

The illicit and improper use of certain drugs (for example, cannabis, amphetamines, barbiturates, opiates and hallucinogenic drugs) is incompatible with personal welfare and the pursuit of academic excellence and will not be tolerated by the University. Furthermore, the illicit possession or transfer of these drugs is a state and/or federal offense, and the University will cooperate fully with appropriate authorities in the enforcement of the law.

The fundamental concern and responsibility of the University relative to the abuser of drugs is constructive rehabilitation. Within the limitations imposed by law, (Chapter 90, Section 111.3, and Section 113.6, Narcotic Drug Act, for example) the University will promote a program of education and encourage medical consultation in order to meet this responsibility. But it will act firmly through formal disciplinary procedures to control drug abuse in those instances where these measures prove insufficient.

Disciplinary action relative to drug abuse in the University will be administered by the University Discipline Committee.

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THE UNIVERSITY OF NORTH CAROLINA

Sixteen Constituent Institutions

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EDGAR WALTON JONES, B.S., M.S., Ph.D., Vice President—Research and Public Service Programs
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ARNOLD KIMSEY KING, A.B., A.M., Ph.D., Assistant to the President
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RICHARD H. ROBINSON, JR., A.B., LL.B., Assistant to the President
ROBERT W. WILLIAMS, A.B., M.A., Ph.D., Associate Vice President—Academic Affairs

The University of North Carolina was chartered in 1789 and opened its doors to students at its Chapel Hill campus in 1795. Throughout most of its history, it has been governed by a Board of Trustees chosen by the Legislature and presided over by the Governor. During the period 1917-1972, the Board consisted of one hundred elected members and a varying number of *ex officio* members.

By act of the General Assembly of 1931, without change of name, it was merged with The North Carolina College for Women at Greensboro and The North Carolina State College of Agriculture and Engineering at Raleigh to form a multicampus institution designated The University of North Carolina.

In 1963 the General Assembly changed the name of the campus at Chapel Hill to The University of North Carolina at Chapel Hill and that at Greensboro to The University of North Carolina at Greensboro and, in 1965, the name of the campus at Raleigh was changed to North Carolina State University at Raleigh.

Charlotte College was added as The University of North Carolina at Charlotte in 1965, and, in 1969, Asheville-Biltmore College and Wilmington College became The University of North Carolina at Asheville and The University of North Carolina at Wilmington respectively.

A revision of the North Carolina State Constitution adopted in November 1970 included the following: "The General Assembly shall maintain a public system of higher education, comprising The University of North Carolina and such other institutions of higher education as the General Assembly may deem wise. The General Assembly shall provide for the selection of trustees of The University of North Carolina. . . ." In slightly different language, this provision had been in the Constitution since 1868.

On October 30, 1971, the General Assembly in special session merged, without changing their names, the remaining 10 state-supported senior institutions into the University as follows: Appalachian State University, East Carolina University, Elizabeth City State University, Fayetteville State University, North Carolina Agricultural and Technical State University, North Carolina Central University, North Carolina School of the Arts, Pembroke State University, Western Carolina University, and Winston-Salem State University. This merger, which resulted in a statewide multi-campus university of 16 constituent institutions, became effective on July 1, 1972.

The constitutionally authorized Board of Trustees was designated the Board of Governors, and the number was reduced to 32 members elected by the General Assembly, with authority to choose their own chairman and other officers. The Board is "responsible for the general determination, control, supervision, management, and governance of all affairs of the constituent institutions." Each constituent institution, however, has its own board of trustees of 13 members, eight of whom are appointed by the Board of Governors, four by the Governor, and one of whom, the elected president of the student body, serves *ex officio*. The principal powers of each institutional board are exercised under a delegation from the Board of Governors.

Each institution has its own faculty and student body, and each is headed by a chancellor as its chief administrative officer. Unified general policy and appropriate allocation of function are effected by the Board of Governors and by the President with the assistance of other administrative officers of the University. The General Administration office is located in Chapel Hill.

The chancellors of the constituent institutions are responsible to the President as the chief administrative and executive officer of The University of North Carolina.

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Lawrence Samuel Barden, *Assistant Professor of Biology*, B.S., Hendrix College; M.S., University of Maine: Ph.D., University of Tennessee

*On leave of absence 1977-78.

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Newton Hall Barnette, *Distinguished Professor of Engineering*, B.S., Louisiana Polytechnic Institute; M.S., Virginia Polytechnic Institute; Ph.D., Cornell University; P.E.

David Paul Bashor, *Assistant Professor of Biology*, B.S., Ph.D., Florida State University

Everett Alfred Bass, *Assistant Basketball Coach and Lecturer in Physical Education*, B.A., Transylvania University; M.P.A., Kentucky State University

David Martin Bayer, *Associate Professor of Structural Engineering*, B.C.E., Georgia Institute of Technology; M.S.C.E., Ph.D., Vanderbilt University; P.E.

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Fernando Bertoli, *Assistant Professor of Sociology*, B.A., Universidad de San Marcos; M.S., Ph.D., Cornell University

Daniel Charles Biber, *Lecturer in Psychology (part-time)*, B.A., Columbia University; Ph.D., University of North Carolina at Chapel Hill

Larry Thomas Black, *Lecturer in Criminal Justice (part-time)*, B.A., L.L.B., Wake Forest College

*On leave of absence 1977-78.

Julia Kirk Blackwelder, *Assistant Professor of History*, B.A., University of Pennsylvania; M.A., Ph.D., Emory University

Ruth Blackwelder, *Associate Professor of History Emeritus*, A.B., Wittenberg College; M.A., University of North Carolina at Chapel Hill

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